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The role of streamlining in digitalising business processes

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

Johannesburg, Feb. 2023

ABSTRACT

The Fourth Industrial Revolution (4IR) has brought about digitalisation, which has impacted how we run business operations. It has created a radical change in conventional processes. Business leaders and professionals use digital technologies to enhance business processes and achieve higher efficiency. However, much focus is placed on the introduction of technology rather than on how it improves the existing business and delivers efficiency.

The literature reports a controversial application of streamlining and digitalisation that has led to divergent views on business process improvement. Some authors believe there must be a sequential approach before introducing digitalisation, while others argue it depends on the opportunity to digitalise. This study explores the perspectives of South African business leaders on optimising and digitalising processes that seek higher efficiency. Thus, the conceptual framework is based on the principle of good operations, which promotes streamlining using techniques such as Business Process Reengineering (BPR) and Lean thinking before digitalisation with the Digital Assessment Tool (DAS) model.

Nine business professionals were contacted via LinkedIn and interviewed in a one-on-one session using the interview guide in MS Teams. Specific questions were asked about their experiences in business processes, streamlining, digitalisation, and how they achieved efficiency.

The findings show that streamlining is how the As-Is business process can be improved in a non-sequential manner using management techniques (BPR and Lean) and digitalisation, which depends on the opportunities and requirements. Business leaders typically evaluate the outcome against the defined performance objectives, such as project deliverables, customer satisfaction, turnaround times, and other relevant goals to prove efficiency.

The key message of this study is that streamlining is valuable in enhancing business processes, and efficiency is achieved when the business objectives are clearly defined and assessed. The study contributes to knowledge by clarifying the understanding of streamlining and recommending an assessment tool to

guide business leaders' decision-making that looks at the efficiency impact to add value to the business.

KEYWORDS

Streamlining, Business Processes, Digitalising and Efficiency

DECLARATION

I, Matondo Dunny Kulabuna, declare that this research report is my 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: *Matondo Dunny Kulabuna* Signature: 

Signed at Germiston On the 24 day of February 2023

DEDICATION

I dedicate this work to my father, Flay Kulabuna, who always shows and teaches us the courage to overcome challenges.

ACKNOWLEDGEMENTS

I would like to take this opportunity to acknowledge the valuable contributions of the following individuals. First and foremost, I would like to express my gratitude to Prof. Pius Oba for supervising me and providing valuable insights throughout this research project.

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LIST OF ACRONYMS

- BPM: Business Process Management
- BPR: Business Process Re-engineering
- DAS: Digital Autonomous and Smart Operations
- DT: Digital Transformation
- ERP: Enterprise Resource Management
- LM: Lean Manufacturing
- MIT Sloan: Massachusetts Institute of Technology Business school
- OP: Operations Management
- OE: Operational Excellence
- SA: South Africa
- SAP: Systems Applications and Products
- VSM: Value Stream Mapping
- 4IR: Fourth Industrial Revolution

CHAPTER 1: INTRODUCTION

1.1 Statement of purpose

This study explores how business leaders and professionals streamline business processes in implementing digitalisation and how they measure efficiency.

1.2 Background of the study

Business processes are all the activities performed by the organisational resources sequentially and repeatedly to deliver value to customers. Organisations rely on processes to produce products and services enabled by the strategy and technology, meanwhile streamlining is the means to improve such processes (Armstrong & John Lee, 2021). As the 4IR emerges, digital technologies are used to augment business processes and achieve efficiency, however much focus is placed on the technologies than on how to achieve optimal results. Organisations depend on professionals in several job roles such as business process engineers, continuous improvement specialists and data scientists to support the improvement and implementation programmes that aim to exceed the growing customer expectations (Markovitch & Willmott, 2014a).

From a South African perspective, many organisations lack internal competitiveness and disregard the process capability to enhance customers' experience (Vermeulen et al., 2012). Optimising business processes is not a priority for most companies because of the drive for revenue and profits, while inefficiency is hidden in the processes. The international benchmark reports a gap in skills that impede the advancement of digitisation programmes in South Africa. Despite this, organisations are keen on implementing digital technologies to remain relevant and thrive in competitive markets (Mabe & Potgieter, 2020).

According to the 2019 McKinsey report, digitalisation could boost the South African economy and address the challenge of unemployment by creating more than one million jobs by 2030 (Magwentshu et al., 2019b). Therefore, South Africa

presents an exciting context for this study due to the challenge of skills, process inefficiency, and the role of technology in the economy (Myovella et al., 2020). The motivation in this context is to explore and learn from the experiences of the scarce professionals who digitalise business processes and the benefits digitalisation offers to economic productivity in enabling customer satisfaction from seamless business processes (Viswanathan & Telukdarie, 2021).

1.3 Research problem

The problem being reported is that implementing digitalisation before streamlining processes generates waste and inefficiency in business performance. Bortolotti and Romano (2012) argued that a lack of streamlining causes problems and impacts the business's ability to deliver value to customers. Focusing solely on technology rather than business processes has led to many failures in digitalisation (AbdelMoneim, 2020).

Small et al. (2011) have stated that high costs are associated with inefficient business processes, particularly for small and medium-sized enterprises where capital is a constraint. In many cases, inadequately implemented new technologies lead to waste such as underutilised resources, poor customer experience, and high operating costs (Antony et al., 2022).

The gap in the literature is the argument by many authors of the sequential approach to efficiency, which is contrary to the different views of business leaders that confirm a divergence between the theory and practice of digitalisation. The literature promotes streamlining as a necessity before digitalising, with divergent perspectives and approaches that need clarification (Kimberling, 2022). In a study that focuses on diagnosing the process of digital maturity, the authors emphasise streamlining existing processes before digitalising. Standardising and improving processes is a prerequisite to avoid non-value-added activities (Boute & Van Mieghem, 2021). Small et al. (2011) also advocated for streamlining and investing in improvement initiatives before implementing technologies.

However, many business leaders and specialists focus on technology rather than business process improvement (AbdelMoneim, 2020). Observations and reports suggest that it is often controversial whether business processes should be streamlined before digitalisation (Kimberling, 2022). According to the MIT Sloan Management Review, digitalisation programmes undervalue the benefits of streamlining, and the results are frequently more costly than beneficial (Ross, 2017). A report surveying 500 process excellence professionals claims that only 35% of leaders worldwide recognise the need for streamlining processes; a high percentage of firms do not streamline before digitalising because most leaders focus on creating processes that fit technologies, even though there is no way to derive the best output (Celonis, 2021).

The lack of streamlining business processes in South Africa potentially impacts economic productivity growth, including business efficiency, customer experience, and digital transformation efforts (Magwentshu et al., 2019). According to the MIT Center, only 28% of established businesses have successfully digitalised, and those that failed in their digitalising efforts impeded the digital transformation (Ross, 2017). Therefore, the purpose of this research is to explore and answer the question about streamlining, digitalising, and efficiency performance from a South African professional perspective, using a qualitative approach.

1.4 Research objective

This research seeks to explore how South African business leaders and professionals streamline business processes in the context of digitalisation and how they measure efficiency.

1.5 Research question

How do South African business leaders and professionals streamline business processes in digitalising, and how do they measure efficiency?

1.6 Rationale

In support of the research on rationality, reports have revealed an ambiguous practice of digitalisation among business leaders and professionals. This ambiguity has resulted in implementing technologies without considering the business, leading to inefficiency (AbdelMoneim, 2020). McKinsey's report suggests that many companies are not benefiting from digital initiatives due to the wrong approach and practices, resulting in disappointing results. The report also highlights that focusing on creating processes that fit technologies is unsustainable and ineffective (Bollard et al., 2017).

Even though digital technologies are implemented to optimise operations, many businesses still struggle to gain benefits. This is because technology alone does not understand the organisation and cannot guarantee success (Kocaoglu & Acar, 2015). In South Africa, studies on streamlining and digitising business processes are prominent (Magwentshu et al., 2019a). However, more research is needed to explore and learn from the experiences of leaders and professionals involved in digitalisation programmes, specifically from a process streamlining, digitalising, and efficiency measuring perspective (Mapingire et al., 2022).

Therefore, this study aims to explore the insights and experiences of professionals in achieving business efficiency and sharing best practices. This qualitative study will unveil practical insights and guide business leaders to learn from the failures and successes of the selected participants. It will also address the ambiguous topic of the application of streamlining and digitalisation. In a country like South Africa, where digital skills are lacking, successful programmes aligned with this streamlining theory will build confidence and in-house capabilities of skilled employees, which can then be quickly leveraged to digitalise processes (Markovitch & Willmott, 2014b). Business leaders and professionals applying this insight will minimise waste, maximise efficiency in support of South African economic productivity, and enhance customers' experiences (Nqgondi et al., 2021).

1.7 Delimitations of the study

This research focused on experienced professionals and business leaders from various industries and sectors in South Africa who are directly or indirectly involved in streamlining and digitalising business processes. This includes professionals with main jobs or extended roles in digitalisation, decision-makers, developers, or drivers. However, users and customers at the receiving end of the processes are excluded due to their lack of influence on the strategy adopted. And the 8th waste of Lean philosophy referring to the unused talent is also excluded.

The objective of this study is to unpack the practical experiences and stories of business professionals, which will help answer the research question. All operational business processes, including both core and non-core processes that the business relies on to deliver value to stakeholders, are included. The study covers different management improvements approaches, such as BPR and Lean techniques to streamline business processes, and the technologies that drive digitalisation, with a particular focus on the DAS model.

While digital transformation and change management are beyond the scope of this study, it is recommended that organisations embark on a change management programme to cement the implementation of digitalisation. Digitalisation success can only be achieved through integrating and leveraging the entire organisation, including culture and people (Kohnke, 2017).

1.8 Definition of terms

- Business processes refer to all the activities carried out by an organisation in a specific order to deliver a particular outcome for a recipient. Businesses exist because of activities that provide value

sought by customers, which can be viewed at different levels, from broad to detailed processes (Armstrong & John Lee, 2021).

- Streamlining is the action of making the business simple and more efficient by eliminating waste using improvement techniques such as BPR and Lean thinking (Akbulut-Bailey et al., 2012).
- Digitalisation is the process of supporting business processes digitally as opposed to being analogue-driven, manual, or paper-based. This involves leveraging digital technologies such as 4IR Techs, CRM, ERP systems, Automated Process Applications, and Advanced Software Solutions that drive business efficiency (Boute & Van Mieghem, 2021).
- Efficiency refers to achieving better output quality while reducing costs and complexity in business processes and operations (Slack et al., 2017).

1.9 Assumptions

It is assumed that the participants have reflected on their perspectives and experiences without disclosing sensitive or confidential information that may impact their jobs or this research. Furthermore, the participants openly shared their digitalisation project successes and failures.

1.10 Chapter Outline

CHAPTER 1: INTRODUCTION

Introducing the case of streamlining as a prerequisite in digitalising and the inefficiency in automating waste.

CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK
Reviewing the knowledge of streamlining and digitalising, which includes:

- Streamlining business processes using BPR and Lean thinking.
- Digitalising business processes using the DAS model.

- Streamlining before digitising business processes, literature review and similar studies to address the question and looking into the efficiency of performance results achieved after that.
- The theoretical framework presenting the ideology and structure

CHAPTER 3: RESEARCH METHODOLOGY

Present how this research was qualitatively conducted, including how participants were interviewed, the methods and tools used and how the data was collected.

CHAPTER 4: FINDINGS

Present the findings and data.

CHAPTER 5: DISCUSSION

Gives a view of the findings.

CHAPTER 6: CONCLUSION

Finalises the report and provides recommendations.

CHAPTER 2: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

The background discussion provides a comprehensive review of the literature, starting with the definitions of keywords related to streamlining and digitalisation. It then delves into the two schools of thought on streamlining, one of which involves eliminating waste while the other involves leveraging digitalisation. The discussion includes an analysis of the knowledge that underpins the theoretical perspective and the application of streamlining methodologies such as Business Process Reengineering (BPR), Lean Thinking, and the evaluation of digitalisation using the DAS model. These improvement methodologies are selected based on their natural focus on business process improvement (Zaini & Saad, 2019). To reinforce the review, related studies, insights, and reports from reputable professionals and consulting firms are compared with the research objective to demonstrate the value and uniqueness of this study, which seeks to explore the phenomenon of streamlining and digitalising business processes from practical experiences.

The second section of the discussion focuses on the study objective and its relation to the literature, along with the "why" of not streamlining and the three derived propositions. The last section presents the analytical framework, which includes the theoretical framework based on the ideology of streamlining from the perspective of good operations management and the conceptual framework that guides this study using an input-output model. The literature review concludes by highlighting the two main perspectives on streamlining: the first is streamlining before digitalisation, and the second involves streamlining while embedding digitalisation. It also discusses the role played by the DAS model in gauging digital maturity and readiness.

Overall, the literature review provides a comprehensive understanding of streamlining and digitalisation of business processes. It helps establish a strong

foundation for the research and provides a solid framework for the analysis of the research findings.

2.2 Definition of topic or background discussion

2.2.1 Streamlining, the application of BRP and Lean

Streamlining involves the elimination of waste and making operations efficient and free from activities that add no value to the customer or the business (Zaini & Saad, 2019). The first school of thought regards streamlining as removing unnecessary waste or redundant resources to achieve the best possible outcomes for the organisation through management strategies. The Oxford dictionary provides an example of an organisation that streamlined its operations by eliminating a management level. It defines streamlining as using simpler, more strategic and faster methods to make the business more effective and efficient (Oxford, 2022). Streamlining thus seeks organisational efficiency, which may have an impact on people, corporate culture, and structure. Leaders should carefully consider the implications and benefits of this viewpoint.

CFI (2022) contends that streamlining is about optimising business processes and eliminating unnecessary steps to achieve efficiency through automation, modern technology, or improvement techniques. This entails using computer technology to eliminate complexity and unnecessary business processes. This thought complements the first one because it combines various means, including the use of information and communication technology, which are prominent in today's business world.

The common theme in the above definitions of "streamlining" is seeking organisational efficiency by removing waste or scaling the value through improvement strategies or technologies. Moreover, streamlining aims to achieve business objectives and stakeholder satisfaction, merging the two schools of thought. However, the ambiguity in streamlining applications reveals a broad and

divergent understanding among business professionals, which characterises this study (Bortolotti & Romano, 2012).

Therefore, the definition of streamlining adopted in this study is less dependent on digital technologies and more on the improvement methodology, although digital tools could be used to enhance effectiveness and accuracy. Streamlining is defined as the action of making business processes simple and more efficient by eliminating waste using improvement techniques such as BPR and Lean to pave the way for digitalisation (Akbulut-Bailey et al., 2012).

BPR: Business Process Re-engineering

The selection of BPR is based on its popularity and effectiveness in supporting process improvement initiatives (Zaini & Saad, 2019). Depending on the process maturity and level of the organisation, it can be supported by sophisticated information technology tools such as business process modelling software (Indeed, 2021).BPR is known as a powerful and dramatic change enabler when appropriately implemented to achieve competitiveness (Goksoy et al., 2012), and many organisations have turned to it to become more efficient (Hashim et al., 2015). It is well-suited to radically streamline operational processes from a customer-flow perspective or business strategy perspective.

BPR is presented as a rethinking approach to improvement through the re-arrangement of processes that flow smoothly from a customer's perspective rather than a functional perspective. It is primarily a top-down approach from leadership, studying the flow of work and information before improving. Process-oriented mapping and analysis tools, such as flow-process charts and value stream mapping, assist in creating the as-is model from which analysis is performed to derive the needed improvement (Melão & Pidd, 2015).

The principle of BPR is to have a process-oriented approach to customer needs with a flow of information or materials, which can be supported by a process map or value stream map that shows the connection of the different activities performed. It specifically depicts the before and after improvements.BPR attempts to make a dramatic change to the process to impact performance, brings

the internal supplier and customer closer to avoid delay (waste), and advocates that process actions and decisions (control and manage) must be closer to avoid wasting time (Slack et al., 2017).

However, BPR often lacks addressing and incorporating the human factor. The experiences of those running the processes, as seen by people, can be reduced as a result of the BPR exercise, which can hinder the capabilities of the operations or procedures. To avoid this, change management is recommended (Slack et al., 2017). According to Butt (2020), to mitigate the risks presented by BPR, a more scientific and evidence-based technique was introduced called Business Process Management (BPM). BPM is a management discipline that includes an IT analysis platform that helps the activities of collecting, identifying, designing, executing, documenting, measuring, monitoring, controlling, and promoting improvement in business processes to meet business objectives.

BPM focuses on an incremental approach to improving processes that can be initiated by middle management. It studies the flow of work and information before enhancing and integrating a process-oriented mapping and analysis tool. Since BPM is an end-to-end business process management tool that enables the creation of a process flowchart, it supports BPR and Lean to achieve substantial results (Butt, 2020).

Lean

Lean thinking is introduced as an incremental approach to compensate for the gap in BPR that focuses on sporadic change. Lean is about reducing waste and increasing throughput gradually in the process. The Lean philosophy promotes key topics such as waste reduction, people involvement, and continuous improvement (Slack et al., 2017). Lean involves daily changes in operations and processes to promote continuous improvement and operational excellence (Antony et al., 2022).

The core of the Lean philosophy describes seven types of waste that are usually scrutinised and reduced in existing business processes. These are waste due to transport, inventory, motion, waiting time, over-production, over-processing, and

defects (Slack et al., 2017). Value Stream Mapping (VSM) supports Lean in understanding the flow of information or materials as they move into a process, recording direct activities of creating products and services, and indirect information systems that support the process (Slack et al., 2017). VSM is similar to a process map, but it is more applicable to the high-level structure by looking into high supply chain level process groups. It can also support the BPR effort because it provides the big picture (Slack et al., 2017).

Like any change programme that attempts to shift the current condition of the organisation and its processes, Lean is not easy to implement if the know-how, leadership support, and employee involvement are lacking. Most small and medium-sized enterprises believe Lean is more applicable to large organisations because of the perceived effort to implement and quantify its benefits, although Lean presents an advantage for any type or size of the organisation (AlManei et al., 2017).

Lean is also associated with a process performance variation tool called Lean Six Sigma methodology. The scope is not detailed in this study because it applies to a performance-project-based perspective that organises people to brainstorm and solve a process-related performance variation. Lean Six Sigma consists of the DMAIC approach, which means defining the problem in the process, measuring its performance, analysing the problem and its root causes, finding solutions to these root causes, and controlling to ensure the improved performance is maintained (Zaini & Saad, 2019).

For both BPR and Lean, processes should be mapped or modelled for analysis and improvement purposes, as it is helpful to map processes with arrows to represent interdependency and structure at various levels. However, it could be time-consuming, which is a challenge that computerised tools such as business process modelling and process mining software are seeking to address since business processes have matured from manual to digital form and have been integrated with data. In the digital format, they can be mined to understand performance objectives (Markovitch & Willmott, 2014b).

According to Kissflow (2021), all improvement techniques promote a systematic plan for assessing the as-is process by mapping it before improvement. This applies to both traditional and digital methods of streamlining, as proposed by Boute and Van Mieghem (2021).

Talking about the emergence of process mining for those processes supported by an IT infrastructure means these processes produce data that can be extracted for analysis and insight using sophisticated techniques such as artificial intelligence and machine learning. It also seeks to improve the status of business processes about any identified wastes, such as bottlenecks, congestion, delays, or non-compliance (Kissflow, 2021).

Therefore, in both techniques discussed above, the first step is to identify, collect information about the process, and measure the As-Is performance effectiveness, which can be facilitated by a manual flow chart, value stream mapping, or integration into the BPM software (Kissflow, 2021). An example of mapping a customer journey when placing an order in an online shop is the different steps behind the scenes until the order is delivered, showing all individual activities and interactions (Brian, 2020). Software mapping and simulation aid in the improvement once a model is available, which is analysed on the platform and then assists in streamlining based on the performance analysis. It is noted that methodologies such as BPR and Lean thinking must be adopted in the context of the organisation and consider various factors such as scope, risk levels, people skills, investment, budget, and duration to achieve the intended streamlined results (Zaini & Saad, 2019).

2.2.2 Digitalising business processes and the application of the DAS model

Organisations are increasingly eager to implement technologies that enhance efficiency in their operations. The reason for this trend is the benefits of 4IR technologies, which enable organisations to excel in the market and enhance their processes. As a result, companies are investing in digital, data-driven algorithms and advanced software solutions to scale their operations and cope with the complexity of extending their product portfolio and personalising services

(Ross, 2017). Digitisation can also serve as an operational necessity that supports digitalisation. For example, implementing IoT for equipment health monitoring and leveraging omnichannel and mobile technologies to enhance the customer experience (Ross, 2017).

Digitisation represents an advanced improvement phase that brings automation and sophistication to business processes, enabling them to scale up and achieve higher efficiency. According to Markovitch and Willmott (2014b), digitisation involves the introduction of software that replaces manual and paper processes, automating specific process tasks. This can result in a massive improvement in order turnaround time and a cost reduction of up to 90%. In essence, digitisation is the effort that supports digitalisation to achieve a digitally-supported business workflow or process (Boute & Van Mieghem, 2021).

For this study, the term "digitising" is defined as an advanced stage in which business processes are supported digitally, as opposed to being analogue-driven, manual, or paper-based. This involves leveraging digital technologies such as 4IR Techs, CRM systems, ERP systems, automated process applications, and advanced software solutions that drive business efficiency. Digitalisation has an impact on how a business creates products and services, from fundamental to advanced capabilities, including its resources in operations with advanced software and hardware solutions to achieve business efficiency. This concept is presented in the DAS model (Boute & Van Mieghem, 2021).

The DAS model presents two critical dimensions to digital technologies: one enables autonomy and automation of work, and the second uses intelligent control algorithms. In the digitalisation journey, it is important to recognise the current level of business processes and plan for the expected maturity level driven by organisational objectives and goals. In this instance, Boute and Van Mieghem (2021) proposed a diagnostic tool called the DAS model, which assesses the current business process based on the digital, autonomous, and smart-intelligence maturity levels.

This assessment tool focuses on the As-Is streamlined process, which aims to achieve high efficiency and scalability by eliminating waste. The ultimate goal is to move the process from a lower to a higher level of digitalisation. To accomplish this, the main activities are mapped or represented as processes 1, 2, and 3, and their respective digital levels (1, 2, and 3) are evaluated. These levels are depicted in Table 1.

Table 1. Adapted from the DAS model (Boute & Van Mieghem, 2021)

Maturity level description	Process 1	Process 2	Process 3
Maturity Level 1	x		x
Maturity Level 2		x	
Maturity Level 3			

Moving from a lower level (1), where there is little or no computerisation and everything is done manually with paper forms, to a higher level (3 or 5) involves connecting all devices in the network, including IoT, to achieve real-time data insights. At the highest level, the IoT can be integrated to feed into the overall process using sensors. Higher levels of digitisation enable real-time monitoring and also open up new opportunities for optimisation as data is generated for use in machines to perform work using advanced algorithms and artificial intelligence. This facilitates the automation of work, such as working in Microsoft Office between different applications (Excel, Access, PowerPoint, SharePoint, etc.). Such workflows can be easily automated using a bot or a programmable mechanical device (Boute & Van Mieghem, 2021).

When most work is done digitally with applications, it opens up the possibility of automating tasks to be performed by machines. For example, a CNC machine can print a product and its application without human intervention. However, automation does not always equate to autonomy. While old mechanical devices

could work autonomously, they may not necessarily have digital autonomy (Boute & Van Mieghem, 2021).

Autonomation occurs when a machine can run independently and without human intervention or control. Combining automation and autonomy is about the role and location of control rules (algorithms), which dictate when and how tasks should be performed.

Smart operations occur when we empower these control rules or algorithms with intelligence, allowing them to sense and learn by using state variables and observations to become more adaptive, contingent, dynamic, and agile. An example is condition-based intelligence used to schedule maintenance based on the condition of machines, which is similar to preventive maintenance with feedback control. Level 1 occurs when algorithms have multiple inputs (Boute & Van Mieghem, 2021).

However, investing solely in digital technologies while ignoring key considerations such as change management, leadership, and people will not lead to sustained competitiveness at higher levels. Improvement in other aspects of operational systems, procedures, and policies is required. Thus, streamlining operational processes before digitisation means simplifying complexity in the business and leveraging improvement techniques from lean manufacturing and business process re-engineering to eliminate existing waste and derive the best value from digitisation (Boute & Van Mieghem, 2021).

2.3 Research objective literature

This section of the literature focuses on how different authors, reports, and business professionals conduct streamlining and digitalisation, as well as exploring why digitalisation may occur without streamlining.

Streamlining is based on the principles of simplicity, business efficiency, customer satisfaction and cost minimisation. According to Boute and Van Mieghem (2021), good operations management involves streamlining before

implementing digitalisation to avoid automating waste. This forms the basis for this study, as it suggests that a business can operate cost-effectively and exceed customer expectations by eliminating waste from its processes.

Bortolotti and Romano (2012) conducted a case study in a service company and concluded that lean comes before digitalisation. They believed that automating a process that is not streamlined creates problems, and therefore supported the removal of waste by mapping the existing process before moving to digitalisation to scale up value-added activities sought by customers while avoiding errors and inefficiency. However, their research lacked the practical views of business leaders.

Nicoletti (2013) conducted a study on the digitalisation of procurement processes using the lean six sigma approach. The study found that extensive implementation of information and communication technology (ICT) did not eliminate waste. The author observed that not mapping and streamlining the process resulted in similar problems as those reported in previous studies. While the study had similarities with other programmes and best practices, the improvement technique used differed. The author supported streamlining the procurement process before digitalising to prevent inefficiencies in business processes.

In 2014, McKinsey published an article that supported the idea of digitalising business processes. The article argued that organisations should accelerate their digital capabilities to meet customer expectations. The article emphasised that business leaders should not focus solely on digitalisation. They need to reinvent business processes by reducing unnecessary activities that add no value. The article primarily concentrated on general practices and success factors from the largest organisations in the United States. It highly promoted streamlining business processes to satisfy customers (Markovitch & Willmott, 2014).

Another study on streamlining processes for digitalisation recognised the importance of streamlining to understand and evaluate business performance for achieving efficiency. However, it did not explore the extent of the involvement of

process excellence professionals. This study focused on improving business processes before digitalisation to prepare a business for implementing digital technologies and key enablers. The study examined the level of the business and its elements (Lodhi et al., 2015).

Lodhi et al. (2015) proposed using Business Process Management (BPM) as an information technology platform to analyse and improve digital business processes by integrating elements such as data, applications, and technological assets. The study examined the different levels of business processes and digital maturity that could be modelled to identify inefficiencies. In this case, paper-based streamlining proved to be ineffective. The focus was on the information technology tool to provide an analytical framework rather than using improvement methodologies independently of technology.

In 2017, McKinsey released a report on the future of business operating models, which focused on the integration of digital technologies, organisational resources and the capability to succeed in the market. This report provided insights into approaches and levers for driving a new operating model, including lean process design, digitisation, intelligent process automation, advanced analytics, and business process outsourcing. The report emphasised that the sequence in which these approaches were applied should be relative to the challenge and opportunity at hand, and companies should weigh what to do first based on the situation. The report promoted the idea that the levers should complement each other to provide a positive effect but not necessarily streamline and digitalise (Bollard et al., 2017).

According to Eric (2018), there are debates around the controversial topic of whether business processes should be streamlined first before digitalisation. He claimed that ERP system integrators and software vendors frequently advise implementing the ERP to dictate and standardise processes based on best practices, which can lead to most digitalisation failures, lengthy project timelines, and high budget costs. Regardless of what his clients claimed, he believes that the improved business processes should be independent of the technology and that a cost-effective improvement approach, such as using a pen and paper to

derive the future blueprint without a serious commitment to sophistication, is best (Kimberling, 2022).

Doyle and Cosgrove (2019) ran an experiment for the EU-funded programme in an SME to study how digitalisation must be implemented incrementally to avoid a radical change and improve production. The research stated that businesses must improve their operations and seek integration in the value chain, and competitive advantage is achieved through better operations processes and innovative business models before digitisation. The result of the incremental improvement approach has helped SMEs and has proven to enable management to gain confidence in the digital transformation journey. This is obvious support for streamlining the organisation without the use of sophisticated technology to remain lean.

Butt (2020) proposed a conceptual framework based on BPM to support manufacturing in the journey of digital transformation, focusing on organisational transformation with a moderate emphasis on streamlining as a prerequisite for process improvement. The study integrated industry 4.0 technology trends, organisational strategies, strategy levels, and technology-focused strategies and consisted of sequential phases from identifying the process to discovering the process, analysing, redesigning, and re-engineering, and then streamlining.

To strengthen the above authors' views, the principle of good operations management supports streamlining through standardising and optimising processes to remain the foundation for achieving operational efficiency (Boute & Van Mieghem, 2021). This view constitutes the backbone of this study, as it recognises the varied nature of business processes and promotes their enhancement to avoid costly waste.

An article published in 2022 using a systematic review approach described the evolution of lean in industry 4.0. It claimed that Lean could be a prerequisite or a facilitator of Industry 4.0 because there is a synergic relationship between Lean and digitalisation to achieve operational excellence. The lack of integration guidance amongst business professionals still exists, and it concluded by stating

that the relationship between Lean and digitalisation is not monodirectional but bidirectional, meaning it is a continuous cycle from streamlining to digitalisation and digitalisation to streamlining business processes. Organisations and professionals should continuously think about lean and leverage digital technologies (Antony et al., 2022).

The 'why' digitalisation happens without streamlining

There is a saying that digitalisation is not the end goal but rather an instrument to achieve it. The introduction of new technologies in business should be driven by process excellence. However, the rapid changes in digitalisation provide little guidance and practical recommendations (Martinez, 2019). This lack of guidance is one reason why businesses fail to streamline their processes even when the technologies are off-the-shelf with generic benefits. Many organisations are eager to replicate the so-called success stories of other companies without fully understanding the implications of automating waste and achieving less efficiency (Linde et al., 2020).

The lack of streamlining in business processes can be attributed to the comprehensive competence and skills of business leaders and professionals. Leaders play a key role and rely on their expertise to leverage and optimise organisational resources in the pursuit of lean processes and operational excellence (Cortellazzo et al., 2019). Those involved in driving digitalisation initiatives must be proficient in assessing and addressing the existing pain points, weaknesses, and challenges within the organisation.

2.3.1 Proposition 1: Streamline before digitalising

It is evident that streamlining achieved through improvement strategies using Lean or BPR positively impacts businesses and plays a vital role in enhancing business efficiency. Streamlined business processes enable digitalisation because they demonstrate an optimised, simple flow of values that integrate business activities in a more structured manner, resulting in higher scale efficiency (Altendorfer-Kaiser, 2014).

Hence, the first proposition is that streamlining is a prerequisite for digitalising business processes to achieve efficiency. This is the first school of thought with sequential steps as depicted in the analytical framework. However, the literature presents several perspectives, debates globally and many organisations fail to streamline before digitalising.

This approach is supported by Boute and Van Mieghem (2021) in improving existing processes, and it is confirmed by Marino (2022) in the application of Lean Thinking and BPM to reduce waste from rework and defects in the healthcare sector when streamlining is applied first.

2.3.2 Proposition 2: Digitalise without streamlining

The second proposition emerging from the literature is that digitalisation often occurs without proper streamlining, resulting in modest outcomes. Therefore, this study aims to investigate whether efficiency can be achieved in digitalisation without streamlining and to reflect on the experiences of business professionals for insight into future endeavours.

This proposition is related to the common approach of introducing technology as the solution to all business problems, with the technology itself becoming the ultimate goal (Butt, 2020). However, without a solid foundation and a proper assessment of what is truly relevant to the business, this approach can result in various problems and waste (Boute & Van Mieghem, 2021).

2.3.3 Proposition 3: Streamline embeds digitalisation

The third proposition stems from the understanding of streamlining and its relationship with the means deployed to improve business processes. Streamlining can be achieved through management techniques and automation, which are embedded and integrated. This proposition represents the second school of thought, which suggests that streamlining is an integral part of

digitalisation and can be leveraged to achieve efficiency by using technology to support business processes and ensure their relevance in the current context.

There is a strong correlation between streamlining and digitalisation as they complement each other in achieving higher efficiency (Lorenz et al., 2019). This proposition demonstrates how digitalisation is integrated into the process of streamlining to produce the best possible outcome or efficiency.

2.4 ANALYTICAL FRAMEWORK

2.4.1 Theoretical Framework

The theory of streamlining defines processes as a set of interrelated activities that organisations rely on to transform inputs into outputs. It argues that these processes, whether manual or digitised, must be efficient to ensure value is delivered to stakeholders while minimising waste, as this enables the continuity of the business (Zaini & Saad, 2019). In recent years, organisations have found that improvements in technology alone are often not sufficient to achieve and sustain higher levels of competitiveness, and streamlining business processes has become a crucial factor in unleashing the potential of running a business free of complexity, redundancy, and bottlenecks. It is evident that as businesses streamline their processes before digitalising, there is a high chance of achieving performance objectives efficiently (Slack et al., 2017).

Thus, this study is primarily based on the principle of good operations management, which stipulates streamlining business processes using improvement techniques before digitalisation to avoid automating waste. Streamlining is underlined by the ideology of simplicity, business efficiency, customer satisfaction, and cost minimisation (Boute & Van Mieghem, 2021). However, there are multiple perspectives and controversial debates among professionals regarding the extent to which streamlining before digitalisation prevails and applies to the organisational context to achieve operational efficiency. These perspectives namely streamline before digitalising, digitalise

without streamlining and streamline embedding digitalise form the theoretical framework of this study, which (Kimberling, 2022; Nicoletti, 2013).

2.4.2 Conceptual Framework

As illustrated in Figure 1, the conceptual framework is adapted from the operations management transformation input-output model. It comprises a business process as an input to the first transformation of streamlining, which produces an optimised process as an output. This output then becomes the input for the second transformation of digitising, which finally produces the output of an efficient digitised business process (Slack et al., 2017).

This framework was developed based on the need for efficiency in streamlining existing processes before digitising. According to Boute and Van Mieghem (2021), standardising and improving processes are prerequisites for digitisation to avoid non-value-added processes. Streamlining is an improvement agent that is associated with management improvement approaches such as BPR and Lean. Organisations should consider implementing these improvement approaches before adopting advanced technologies, especially for small and medium-sized enterprises, as they offer a cost-effective investment (Small et al., 2011).

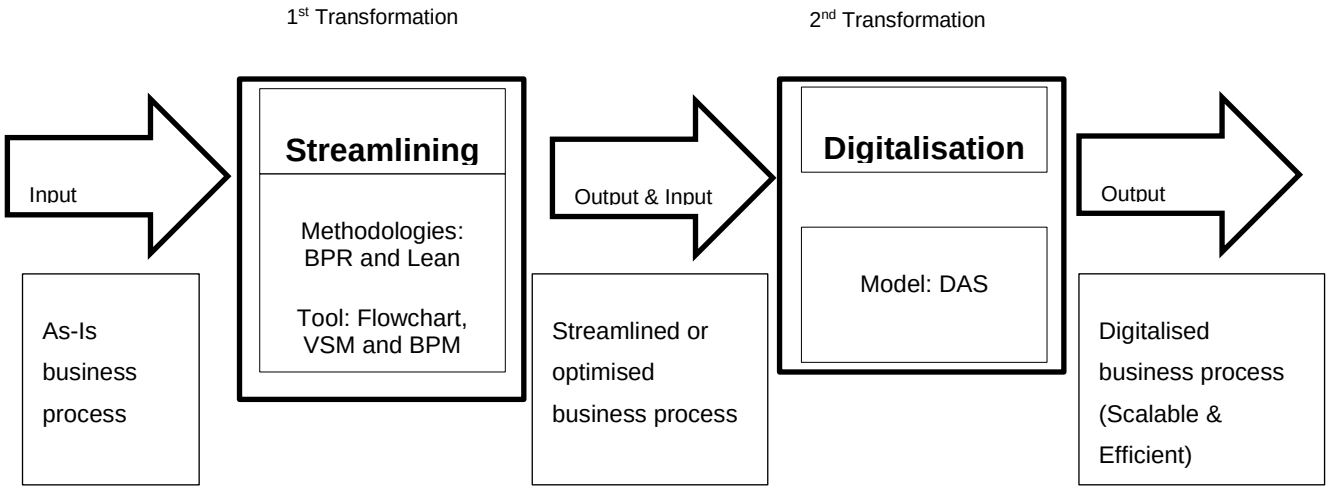


Figure 1. Conceptual Design adapted from Input-Output Model (Slack et al., 2017)

The conceptual framework mentioned above also supports the first school of thought, which aims to eliminate waste and simplify business operations. Organisations that incorporate a lean culture can help facilitate the transition to digitalisation, where technologies can provide higher scalability and performance (Antony et al., 2022).

2.5 Conclusion of Literature Review

Although the topic of streamlining is controversial and prominent among professionals, there are two main understandings of its application in achieving efficiency through digitalisation. The first understanding is that streamlining is applied as a prerequisite to digitalisation using improvement methodologies such as BPR and Lean (Antony et al., 2022). The second understanding is that streamlining also employs digitalisation to achieve efficiency, with an emphasis on process improvement. It is said that adopting digital tools to reduce manual steps is a form of streamlining business processes (Parviainen et al., 2017).

The DAS model aids the digitalisation phase using a diagnostic approach to assess the process As-Is maturity level (Boute & Van Mieghem, 2021). The objective of this study is tentatively answered with the different insights and views that guided the analytical framework. This framework depicts the ideology of good operations management, which is to streamline before digitalising, and concludes with an input-output model that supports the conceptual model (Slack et al., 2017).

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Research approach

This research proposes that streamlining is a prerequisite for digitalising business processes to achieve operational efficiency. However, due to the gap that exists between the theory and practice of digitalisation around the world, and the divergent perspectives among practitioners (AbdelMoneim, 2020), a qualitative methodology is adopted to interview business leaders and professionals in South Africa to explore and learn from their experiences. The research question on how operational efficiency is achieved through streamlining before digitalisation is finally answered.

Professionals play key roles in implementing digital technologies; their experiences are crucial in understanding the process. Therefore, a qualitative approach is selected as it provides the opportunity to engage and learn from the selected participants using their respective contexts and organisations. This approach is preferred over structuring closed-ended questions that overlook their pragmatic reasoning (Forward & Levin, 2021). The assumption is that bias is eliminated and minimised because the study deals with business leaders and professionals who openly share their true experiences.

3.2 Research design

The basic qualitative design was used due to its flexibility in conducting interviews and collecting the views of participants based on their experiences and personal perspectives on the process of digitalising projects, irrespective of their current positions or employment status. These professionals were asked open-ended questions to encourage engagement and to explore their personal views, to uncover the practices, techniques, and strategies they used. This approach allowed us to understand the reasoning behind their actions and how they executed their plans, making this design both convenient and robust (Worthington, 2013).

3.3 Data collection methods

The one-on-one interview was chosen as the primary method for data collection from participants using MS Teams due to its convenience for professionals to connect remotely and record the interview discussion, including notes and video recordings. This method provides the advantage of focusing on one participant at a time, creating a space for them to express their views and meanings without third-party intervention. It enables participants to be expressive in articulating their thoughts and allows the researcher to gather in-depth narrative data while facilitating follow-up discussions (Alshenqeeti, 2014).

3.4 Population and sample

3.4.1 Population

The population for this study comprises South African business leaders and professionals involved in streamlining business processes. These individuals possess the skills and experience required to implement digital technologies in their respective organisations to achieve defined outcomes. Their roles could range from business process engineers, digital engineers, operations managers, IT engineers, and other relevant positions as per **Appendix A**. This population is selective, as highlighted in the Deloitte report, due to the digital skills gap in South Africa. The report indicates that only 24% of business leaders believe that organisations have the digital skills needed (Adão, 2020).

3.4.2 Sample and sampling method

As per the basic qualitative method, the recommended number of participants for this study is eight to fifteen. Consequently, nine participants were interviewed, taking into account the time constraint to complete the research while still enabling us to explore the views of a few selected South African business professionals (Baker & Edwards, 2012). This was a purposive study, relying on the researcher's professional network on LinkedIn.

3.5 The research instrument

The interview guide, as shown in **Appendix C**, was developed with sequential questions to expand on the main objective and question, including a flow of thought that started with the aim of the research and then explored the topic of streamlining, digitalising, and achieving operational efficiency. This structure was consistent for all interviews, which lasted for one hour each, resulting in nine interviews with the available participants. Each participant was asked five open-ended questions. Saturation was reached as most professionals shared the same perspective. The interview schedule was planned and executed as per the timeline in the section 3.11 of this chapter.

3.6 Procedure for data collection

The participants were contacted directly via a message invitation on LinkedIn based on their profiles. The message outlined the aim of the study and requested their participation. The consent request was sent via email and received before conducting the interviews, as shown in Appendix B. The interviews were scheduled, and invitations were sent for the agreed date and time. All interviews were conducted remotely using MS Teams, facilitating the participation of all participants regardless of their location and the possibility of recording the meeting with transcripts. The interview guide was shared with the participants before the meeting for preparation and transparency. During the interviews, paper notes were taken as a contingency in case the online MS Teams recording was compromised.

3.7 Data analysis strategies and interpretation

The thematic method was used to analyse the interview transcripts generated from the MS Teams recording and notes. This descriptive method allowed for identifying, analysing, and reporting patterns from the data output of the interviews with all professionals. The data was reduced into a workable format while enabling interpretation, emerging decisions, and flexibility of this study.

As per Castleberry & Nolen (2018), the generic five steps for thematic analysis are compiling, disassembling, reassembling, interpreting, and concluding the data. The deductive approach guided the boundary and criteria that focused on streamlining and digitalising efforts, as per the following five steps (Terry et al., 2017):

Step 1: Read and familiarise oneself with the interview transcripts (text in MS Word).

Step 2: Code the transcript by identifying the main features (highlighting the main points relevant to how business leaders and professionals go about digitising and measuring efficiency).

Step 3: Use initial themes from the three propositions of the analytical framework to aid the thematic analysis.

Step 4: Review the patterns to ensure they are aligned with the research objective of how businesses streamline before digitalisation.

Step 5: Update the defined themes based on the review.

3.8 Possible limitations and challenges of the study

- It is important to note that a qualitative methodology with transcript data is much more challenging to analyse and requires a good background in the research topic, compared to a quantitative methodology with numerical data (Castleberry & Nolen, 2018). Therefore, the analysis process was approached carefully to ensure accurate findings.
- Selecting professionals in this domain can be difficult, and it may be challenging to achieve the right meaning from the transcript data. However, efforts were made to ensure that the selected participants had relevant experience and expertise in the field of digitalisation and operational efficiency, which may have improved the quality of the data collected.

- Two participants could not return the member-checking signed form due to the connectivity issues.

3.9 Quality Assurance

3.9.1 Credibility

To ensure the credibility of the findings, member checking was used, and participants were given the transcripts through a follow-up email to validate their perspectives. Member signatures are added in Appendix B. This method adds rigour to the participant’s views and the analysis of data (Tracy, 2010).

This member checking involves allowing participants to review the data and verify the accuracy of the interpretations made by the researchers. This process helps to reduce researcher bias and provides a more accurate representation of the participants' experiences and opinions. It also strengthens the credibility of the study and ensures that the findings reflect the perspectives of the participants.

3.9.2 Dependability

To ensure the neutrality and consistency of the findings, an audit trail was maintained from the recording of all interviews with participants in MS Teams, including the researcher's notes on the interview form and all activities in the analysis process (Connelly, 2016).

Maintaining an audit trail involves recording all steps taken during the research process, including data collection, analysis, and interpretation. This helps to ensure that the findings are reliable and can be verified by other researchers. It also promotes transparency and accountability in the research process and demonstrates the rigour of the study. By maintaining an audit trail, the research can be replicated and the findings can be validated by other researchers.

3.9.2 Transferability

This study is relevant and easily transferable to other contexts and areas where digitalisation is implemented since digitalisation is an emerging phenomenon driven by societies, and an increasing number of companies in different countries, industries, sectors, and societies are employing professionals to exploit the opportunities that digitalisation brings in transforming economies around the world (Herold et al., 2021).

3.10 Ethical considerations

The ethics clearance was obtained from the faculty as per **Appendix E** before commencing the interviews. and all participants provided their consent before participating in the interview as per **Appendix B**.. The invitation letter sent before the interview contained the purpose of the research, and participants' names are coded in this report with an ID number from ID 01 to ID 9 to ensure anonymity.

As part of the member checking and reflection, participants were asked to raise any concerns about sensitive information that could impact their employment or relationships, and no concerns were raised. This study also abided by the guidelines set by the university, and plagiarism was checked using Turnitin. Any similarity scores of 8% or higher were corrected to ensure that the research adheres to ethical standards. Additionally, all sources were referenced using the Harvard APA 7th style to maintain academic integrity and give credit to the authors whose works were used in the study.

3.11 Schedule and timelines

Activity and description	Timeline
Write and Submit Proposal (Supervisor review)	April – 30 June 2022
Present at the panel session	5-7 July 2022

Supervisor further review and discussion	7 – 14 July 2022
Receive feedback on proposal outcome and ethics clearance	26 July 2022 End of August
Interview participants and collect data (including a follow-up for member checking – credibility)	August – September 2022
Analyse data and synthesise findings	October 2022
Discuss and conclude the project report	November 2022
Complete the first draft and submit it the to supervisor for review	December 2022
Finalise the report and submit them to the supervisor to sign off	January 2023
Submit the final report, Final editing and electronic submission to the faculty office	February 2023

CHAPTER 4: PRESENTATION OF FINDINGS

4.1 Introduction

The findings from the nine participants are presented in Tables 2, 3, and 4, organised according to the three propositions: firstly, streamline before digitalising to achieve efficiency; secondly, digitalise without optimising; and lastly, streamline while leveraging digitalisation. Each table contains a theme corresponding to the respective proposition and is aligned with the analytical framework. To provide greater clarity, each proposition is accompanied by a definition, and a sub-theme highlighted in green summarises the interview's keywords.

4.2 Findings of Proposition 1: Streamline before digitalisation

Table 2. Findings of Proposition 1

Theme:	**Streamlining is a prerequisite in digitalisation to achieve efficiency**.	
Definition:	*Making the business simple and more efficient by eliminating waste using improvement techniques such as BPR and Lean thinking (*Akbulut-Bailey et al., 2012*).*	
Sub-theme: **Key codes:**	*<u>Understand and Improve the As-Is</u>* *Model the as-is* *Identify gaps* • *Using IE Tools* • *Streamline before digitalising* • *Check As-Is relevancy* • *Do Value stream mapping* • *Check key measurables, turnaround time, order cycle, and the different steps*	*<u>Understand and Improve the As-Is</u>* • *Getting recommendations from customers.* • *Asking for ideas from customers* • *identifying the issues* • *Building relationships with stakeholders.* • *Be present to understand* • *Understand and draft the AS-IS* • *Looking at what people do*

	• *Use Strategies such as ECS: Eliminate, combine, and simplify processes.* • *Problem-solving* • *Use of Kaizen techniques* • *Digital tools through the problem-solving* • *The three Ps: plant, people, and process* • *Document and standardised processes* • *Preventive and corrective maintenance* • *Check People's capability and competence* • *Understand and map the current process* • *Use Process chart and swim-lane diagram* • *Identify problems and solve them* • *Finding causes of delay and the impact of manual intervention* • *Asking questions, asking Why and using the Ishikawa tool* • *Taking one part of the business* • *Define the problem* • *Involving people. People are experts.* • *Plot the As-is and propose the future* • *Simulating to see the scenario* • *Drawn it on the board* • *Qualitative and Quantitative techniques* • *Questionnaire/Survey* • *Reduce queuing, approval time, escalation level, turnaround time, a window of opportunity, speed up service* • *Visibility of Productivity parameter output and Optimise the process.* • *Improve efficiency, company growth, Big client base, turnaround time, Information visibility, Transparency, different stages of approvals, Manual process times, customer*	• *Process mapping tool* • *Customer complaint description* • *Checking the servicing time* • *process mapping tool* • *Lean sigma and Waterflow approach* • *Change management* • *Engage employees* • *Listening to the voice of the customer.* • *Understand and document the as-is process* • *The data analytics* • *Time-consuming process evaluation* • *No attempt to improve the process individually* • *Interaction with stakeholders* • *Identify the As-is process, then to-be* • *Three approaches* - *See if there is any duplication* - *See if people use the process in the same way* - *What wastes are in the system using six sigma through standardisation* • *Understand how you're currently doing it* • *Currently as-is and then in the future* • *Where are the pain points* • *Voice of the customer (VOC)* • *Getting in a room to brainstorm* • *Speed and accuracy, quick analysis and decision making, traceability, information sharing* • *Risk, Long turnaround, a strain on the human, fatigue, and human error. It can't be accurate, losing concentration, capture information, avoid delays*

	satisfaction, Competition, Lack of data use and Employee dissatisfaction. • *considerable stock value, Manual accounting, and Streamlining would make the processes faster and more efficient, more effective, more efficient, Management drive, and time-consuming, It was a lot much.*	• *To integrate all processes, and reduce the turner; The ness is growing, inconstancy in how the operation runs, how many touch points there are, the voice of the customer* • *Driven by top management, lack of knowledge, the misconception of the digital, lack of data to measure the process performance, Number of non-standardised processes* • *Enable businesses to work more efficiently in highly competitive environments, Regulatory compliance, Compete beyond borders, do the basics right, Remove silos across the organisation have standard processes, customer satisfaction, inefficient processes, Ability to scale, ability to grow and to minimise human interactions and Quality or error rate (internal)*

4.3 Findings of Proposition 2: Digitalisation with streamlining

Table 3. Findings of Proposition 2

Theme:	**Possibility to achieve efficiency in digitalisation without streamlining.**
Definition:	*The business processes are supported digitally instead of analogue-driven, manual or paper-based, and leveraging digital technologies such as 4IR Techs, CRM, ERP systems, Automated Process Applications and Advanced Software Solutions that drive business efficiency (*Boute & Van Mieghem, 2021*).*
Sub-theme: **Key-codes:**	<u>*Digitalise without streamlining:*</u> • *it depends; get some good results but with streamlining, you get higher efficiency.* • *It's possible, even though it is debatable. With some 5% efficiency is guaranteed* • *It's going to be a failure.* • *It is impossible because you create more problems than you had.* • *No, engaging people will help to improve; you need to understand the end-to-end value chain* • *Streamlining is the business and can't be ignored* • *Streamlining would make the processes faster and more efficient* • *A technology-driven streamlining to customise and configure the solution to specifications you're almost configuring the inefficiencies.* • *The automation is easy; optimise before digitalising.* • *80% of digitalisation happens without optimisation because most people are skilled in automation*

4.4 Findings of Proposition 3: Digitalisation embeds streamlining

Table 4. Findings of Proposition 3

Theme:	**Finding an opportunity to digitalise; streamlining happens in digitalisation to achieve efficiency.**	
Definition:	Leverage technologies to aid business processes while ensuring the As-Is are relevant and improved.	
Sub-theme **Key codes:**	*Leverage digitalisation and streamlining (Improve As-Is)* • *propose improvement intervention* • *opportunity to automate* • *It depends on the requirement* • *do it in a system and eliminate specific tasks* • *to look at the as-is and what is available (opportunity)* • *Leverage technology or what is available* • *Benchmarking processes* • *How our competitors do it* • *Look overseas* • *Standardised to a certain extent, but flexible enough.* • *Project management* • *System development life cycle: SDLC* • *RFQ process* • *Benchmark existing software* • *Issue a tender, tendering process* • *Quest for a proposal* • *Research and development* • *Find a better way to hasten the process to make it as efficient as possible and make it as accurate as possible.* • *Streamline: higher efficiency* • *It is iterative checking and improving* • *Streamlining is a process similar to change management; it needs to happen before, during and after.* • *Streamlining is all about answering why we're doing it.* • *Streamlining would make the processes faster and more efficient* • *To streamline or increase efficiencies.*	*Leverage digitalisation and streamlining (Improve As-Is)* • *Create a business case* • *Bring a system demo* • *Decision-makers look into the proposal.* • *Push-pull from vendors* • *Put a justification, a project brief, and a motivation.* • *Case studies* • *Project management* • *Visiting other organisations* • *Vendor proposal* • *Third-party digital system* • *Project management* • *Change Management* • *Pilot testing* • *User acceptance testing* • *Training* • *bottleneck and pain points* • *look for opportunities to digitise.* • *Engaging with people* • *saw the opportunity and brought the technology based on the challenge.* • *There was a need to prepare the data* • *The research was done on SAP* • *SAP consultants* • *Which areas can we automate quickly* • *The maturity level is different depending on the industry.* • *Financial institutions have specialised skills and considerable budgets to introduce improvement. They need to know the output and much reverse engineering. They need to be flexible because a lot of structure won't allow it. Agile*

	• *Streamlining is almost embedded in digitalisation*	*enough. The ability to change course and A rigid structure won't happen.* *• Companies don't go on and have sequential steps; streamlining is almost embedded there, and much more could be done in that space before you even try to increase the suggested technology.*

4.5 Summary of the findings

The three propositions discussed during the interviews are summarised in Table 5, showing the number of participants who supported them.

Table 5. Proposition and findings summary

Summary of themes / Proposition	**How many participants supported the proposition**
Streamlining happens before digitalisation to achieve efficiency *Understand and Improve the As-Is*	1+1+1+1+0+1+0+1+0 = 6
Digitalisation without streamlining achieves efficiency *Digitalise without streamlining:*	0+0+0+0+0+0+0+0 = 0
It depends on the opportunity to digitalise; streamlining happens in digitalisation to achieve efficiency. It is not always a sequential approach *Leverage digitalisation and streamlining (Improve As-Is)*	1+0+0+1+1+1+1+0+1 = 6

CHAPTER 5: DISCUSSION OF THE FINDINGS

5.1 Introduction

This chapter introduces the demographics of the nine participants interviewed for this study, then discusses the discovered perspectives, which are structured and presented by the three propositions, and are further explained in the context of the literature, which allows the findings to be positioned. In conclusion, the analytical framework is amended, and a new one is presented based on practical views of the findings.

5.2 Demographic profile of participants

The participants in this study are business leaders and professionals from South Africa. The majority of participants have between three to thirty years of work experience and are currently employed either as consultants or employees. Most participants were directly involved in business process improvement and digitalisation in their respective organisations.

5.3 Discussion of streamlining a prerequisite in digitalisation to achieve efficiency.

The findings reveal that the majority of the business professionals support this proposition, which is themed as "understanding and improving the As-Is sequentially before attempting any alternation." Understanding means the problem or challenge in the business process is known and defined, such as long turnaround times, a lack of speed, quick decision-making, lower customer satisfaction, a lack of process accuracy and transparency, etc. And improving means modelling the as-is process, identifying the gaps, proposing improvement interventions, mapping the value stream, solving the problem, and listening to the voice of the customer.

Participants mentioned that this is about the business's existence, and the technology does not understand it. It is essential to check the relevancy of the existing business, do a gap analysis, engage employees, check people's capabilities, and do problem-solving by leveraging Lean methodologies or other industrial engineering tools.

This is consistent with the literature and Altendorfer-Kaiser's (2014) argument that before digitalisation, streamlining should be performed to optimise the As-Is. And, in a sequential approach, the theory of good operations fundamentals is to first optimise and streamline before automating. Therefore, the prerequisite condition of streamlining is proven to achieve efficiency.

5.4 Discussion on achieving efficiency in digitalisation without streamlining

The possibility of achieving efficiency by simply digitalising an existing business is not supported. Some participants mentioned that it depends; some good results might be achieved but with streamlining, higher efficiency is guaranteed. Another participant argued that 80% of digitalisation happens without streamlining. Others said it's possible, even though it is debatable, with some 5% efficiency guaranteed. But most of them believe that it will be a failure and impossible because more problems will arise than before.

This finding agreed with the literature and Boute and Van Mieghem's (2021) argument that optimisation and standardisation should come first to avoid automating waste. Thus, efficiency is not guaranteed without streamlining.

5.5 Discussion of leveraging digitalisation

Leveraging digitalisation is seen as a requirement and opportunity for many businesses, with streamlining playing a vital role in achieving efficiency. While most participants supported this approach, they claimed it was a practical one. It's important to note that, in practice, modelling the existing process and

improving it using management techniques is not applied sequentially but rather as an iterative approach to digitalising and streamlining. Bollard et al. (2017) also stated that the best efficiency is achieved when different improvement levers, such as streamlining or digitalisation, can build on each other, given the many variables businesses encounter, such as legacy systems, regulatory requirements, and centralised globally deployed systems that impact their operations.

Therefore, there's no universal formula for streamlining and digitalisation, starting with lean thinking and finishing with digitalisation. Business leaders propose improvement interventions, look at opportunities to automate depending on the requirements, leverage digital systems, eliminate specific tasks, benchmark what is available, and leverage proven technologies. Once the new systems are implemented, performance objectives are evaluated through the voice of the customer, project management deliverables, investment realisation, comparing the before and after, gap closure analysis, as-is relevancy, etc., to ensure that efficiency is achieved.

The literature reviewed this practical insight of streamlining and digitalisation as the second school of thought, where efficiency is guaranteed because the results or objectives are evaluated. The measurement of efficiency through the parameters listed above provides insight that the literature leaves out. Bauer and Göbl (2019) added that business processes that implemented a higher level of digitalisation produced higher efficiency and fewer manual tasks than processes with no digitalisation. Therefore, the higher efficiency achieved with digitalisation surpasses the manual process of achieving business objectives.

5.6 Conclusion

The three propositions presented describe how business leaders can integrate and apply streamlining and digitalisation to achieve efficiency. Firstly, streamlining can be achieved by understanding and improving processes through the use of management techniques. Secondly, digitalisation without streamlining

is not supported as it can result in waste and reduced efficiency. Thirdly, leveraging digitalisation and measuring outcomes is seen as a practical approach. Streamlining is not a sequential process but is instead embedded in digitalisation. By combining the first school of thought with the second, streamlining is achieved through a process of understanding the "As-Is", mapping, identifying gaps, and improving. With the second school of thought, streamlining through digitalisation occurs by using business processes to guide improvements based on their impact on efficiency and opportunity.

CHAPTER 6: CONCLUSIONS & RECOMMENDATIONS

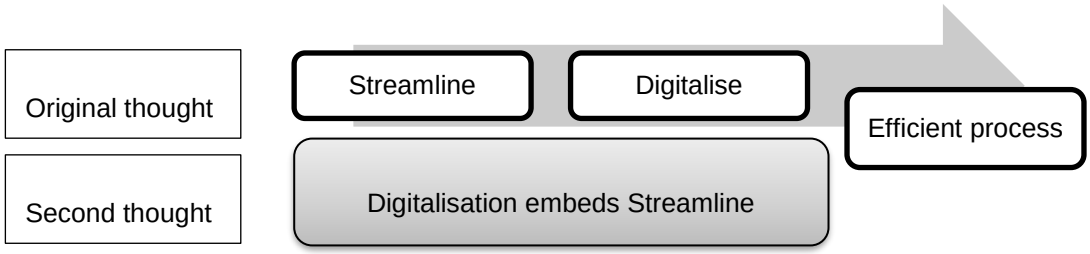
6.1 Introduction

This section emphasises the role of streamlining in achieving efficiency and provides a clear description of how business leaders can streamline business processes. Streamlining is achieved through improvement methodologies that involve analysing and improving the existing processes. Business leaders do not support simply digitalising processes to avoid automating waste. However, they do argue that streamlining can be achieved through digitalisation.

Therefore, a new framework and table are recommended to fit the digital level, the legacy system, and the impact of efficiency, as shown in Figure 2 and Table 6. These tools are designed to help business leaders effectively streamline their processes and improve their efficiency by providing a clear understanding of the relationship between digitalisation, legacy systems, and efficiency.

6.2 Conclusions regarding research objective.

Business leaders and professionals approve that streamlining plays a critical role in digitalising business processes and achieving efficiency. As shown in Figure 2, they all agree that streamlining prevails as the crucial factor to higher efficiency (understanding and improving the business) and recognizing business challenges and opportunities. However, streamlining is not always in a sequential approach as suggested in the analytical framework (Boute & Van Mieghem, 2021) due to factors such as the opportunity, the business legacy, the business requirement and the resource constraint.



Streamlining could apply when there is an opportunity to automate requirements. Combining both strestreamlinedughts by using Business Process Reengineering (BPR), Lean methodologies, and digitalisation is valuable in reaping the benefits

Figure 2. Emergent Framework

of Fourth Industrial Revolution (4IR) technologies (Buer et al., 2021). By leveraging these tools and techniques, businesses can streamline their processes to achieve greater efficiency and better leverage digitalisation to drive innovation and growth.

Business leaders streamline their processes by first understanding the "As-Is" or the present situation of the business. Improvements are then made based on the opportunities presented if the appropriate technologies are available. The critical point is to thoroughly examine the company, its pain points, challenges, people, and processes, and then leverage technologies to address these challenges and improve the overall business.

Therefore, streamlining is about optimising the company's existence and finding the best way to conduct its operations. Whether using improvement strategies or leveraging digitalisation, the ultimate results should prove efficiency through the defined objectives or stakeholder satisfaction. In this way, streamlining is not just about reducing costs or improving processes but also about improving overall business performance and creating value for stakeholders.

6.3 Recommendations

The controversial debate among business professionals about whether streamlining should come before digitalisation is addressed by stating that streamlining happens iteratively when there is an opportunity or a requirement. In the digitalisation journey, it is important to ensure that streamlining happens by identifying gaps and concerns and then leveraging the relevant technology that

minimises waste and enables greater efficiency and effectiveness (Zoltners et al., 2021).

Based on the McKinsey report by Bollard et al. (2017), the literature review, and the findings, this study recommends a non-sequential model that aids in the selection and prioritisation of business processes, as shown in Table 6. This recommended tool could apply to any operation, regardless of its digital maturity level (manual or digital). Business leaders can select the business process to be studied, define the pain points, challenges, and problems, assess the gap, opportunity, and the "As-Is" digital maturity, and then choose the appropriate approach based on the efficiency impact.

The impact on efficiency represents the trade-off of a combination of performance indicators defined as important to the business, such as customer satisfaction, cost, speed, flexibility, quality, and dependability. The opportunity to leverage each approach would depend on the business requirement, available resources, budget, and legacy systems. This model provides a structured and flexible approach that can be adapted to any business operation to achieve greater efficiency and success.

Table 6. Recommended streamlining assessor

Process	**Existing situation (As-is)**	**Digital Maturity level (DAS)**	**Streamlining approaches**	**Impact on efficiency**
Process?	Problem, Challenges, Pain Points, Gaps, Requirements or Opportunity	Assessed level?	**Streamline_1 (Lean, BPR)**	Low - Medium - high?
			Digitalisation_2 (Embedded Streamlining)	Low - Medium - high?

Business leaders are encouraged to implement digitalisation that fits the purpose, where flexibility and customisation are applied, as long as efficiency can be

measured and guaranteed. As a result, it is critical to review the current state, identify opportunities for automation, address challenges and pain points, and implement automation as needed. To avoid waste and potential issues, it is critical not to digitalise before first understanding the AS-IS situation and improving the business. It is important to standardise processes, check that the technology is relevant and can bring value, and, if necessary, customise existing solutions based on the business's needs.

This study recommends that leaders should use the proposed assessment tool and carefully consider deploying resources and budgets when adopting lean, BPR, or digitalisation. It is crucial that the evidence of achieving higher efficiency be visible to avoid the associated costs and loss of revenue that can negatively impact the business (Small et al., 2011).

6.4 Suggestions for further research

This research offers views from a few South African business leaders, but exploring different professionals and industries would be beneficial. This could provide new perspectives and potentially quantify the impact of streamlining on business efficiency, customer satisfaction, and operational and service excellence. A relevant future study would be the application of the proposed tool, "Streamlining Business Process Assessor," which facilitates business leaders' decision-making. This table could be a valuable tool for companies to rethink their existing processes and identify the right technologies to implement, leading to increased efficiency and competitive advantage (Vartolomei & Avasilcai, 2019).

Table 4. Consistency table: research objective, propositions, data collection and data analysis

RO#	Research Objective	Prop#	Proposition	Data collection detail	Data analysis method
1	To explore how business leaders and professionals streamline business processes in digitalising and how they measure efficiency.	1.1	Streamlining prevails as a prerequisite in digitalising business processes to achieve efficiency	Interview guide questions 1, 2 and 3	Thematic analysis
		1.2	Digitalisation without streamlining produces waste	Interview guide questions 5	Thematic analysis
		1.2	Streamlining happens in digitalisation depending on the opportunity to automate and achieve efficiency	Interview guide questions 4	Thematic analysis

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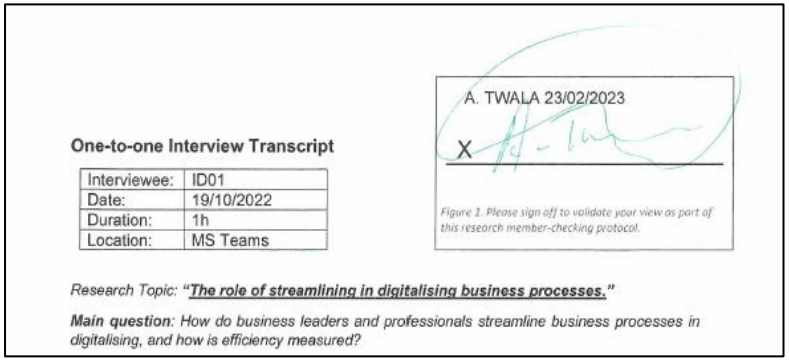
APPENDIX A (The participant information sheet)

Participants ID	Job title
ID01	Senior Industrial Engineer
ID02	Continuous Improvement Manager
ID03	Operations Manager
ID04	Supply Chain Manager
ID05	Senior Business Analyst Consultant
ID06	Specialist Business Engineer
ID07	Supply Chain Manager
ID08	Continuous Improvement Specialist
ID09	Senior Business and Digital Transformation Analyst

APPENDIX B (Participant agreement and consent)

ID	I.... (Please type your name in the below space) agree to participate in this research project. The research has been explained to me, and I understand what my participation will involve	I agree that my participation will remain anonymous, and I will inform the researcher if there is any confidential information.	I agree that the researcher may use anonymous quotes in his research report	I agree that the interview may be audio recorded	I agree that the information I provide may be used anonymously after this project has ended for academic purposes by other researchers, subject to their ethics clearance.
1	ID01	YES	YES	YES	YES
2	ID02	YES	YES	YES	YES
3	ID03	YES	YES	YES	YES
4	ID04	YES	YES	YES	YES

5	ID05	YES	YES	YES	YES
6	ID06	YES	YES	YES	YES
7	ID07	YES	YES	YES	YES
8	ID08	YES	YES	YES	YES
9	ID09	YES	YES	YES	YES



One-to-one Interview Transcript

Interviewee:	ID01
Date:	19/10/2022
Duration:	1h
Location:	MS Teams

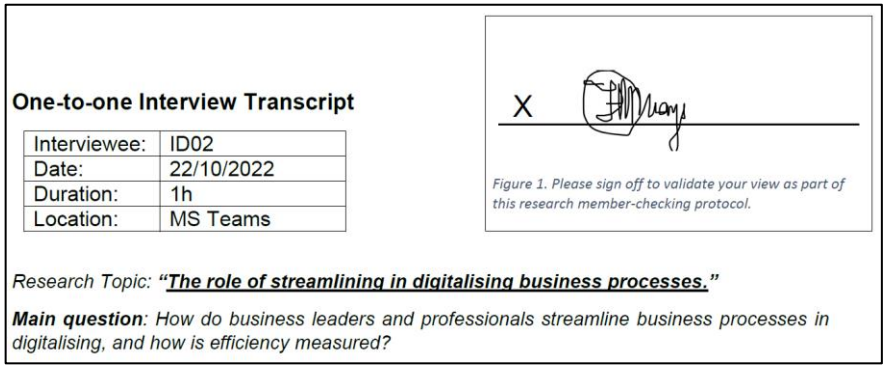
A. TWALA 23/02/2023

X

Figure 1. Please sign off to validate your view as part of this research member-checking protocol.

*Research Topic: "**The role of streamlining in digitalising business processes.**"*

***Main question**: How do business leaders and professionals streamline business processes in digitalising, and how is efficiency measured?*



One-to-one Interview Transcript

Interviewee:	ID02
Date:	22/10/2022
Duration:	1h
Location:	MS Teams

X

Figure 1. Please sign off to validate your view as part of this research member-checking protocol.

*Research Topic: "**The role of streamlining in digitalising business processes.**"*

***Main question**: How do business leaders and professionals streamline business processes in digitalising, and how is efficiency measured?*

One-to-one Interview Transcript

Interviewee:	ID03
Date:	19/10/2022
Duration:	1h
Location:	MS Teams

X 

Figure 1. Please sign off to validate your view as part of this research member-checking protocol.

*Research Topic: **"The role of streamlining in digitalising business processes."***

***Main question**: How do business leaders and professionals streamline business processes in digitalising, and how is efficiency measured?*

One-to-one Interview Transcript

Interviewee:	ID04
Date:	21/09/2022
Duration:	1h
Location:	MS Teams

X DocuSigned by:

Figure 1 Please sign off to validate your view as part of this research member-checking protocol.

*Research Topic: **"The role of streamlining in digitalising business processes."***

***Main question**: How do business leaders and professionals streamline business processes in digitalising, and how is efficiency measured?*

One-to-one Interview Transcript

Interviewee:	ID05
Date:	12/10/2022
Duration:	1h
Location:	MS Teams

X LP MBUYANE

Figure 1. Please sign off to validate your view as part of this research member-checking protocol.

*Research Topic: **"The role of streamlining in digitalising business processes."***

***Main question**: How do business leaders and professionals streamline business processes in digitalising, and how is efficiency measured?*

One-to-one Interview Transcript

Interviewee:	ID06
Date:	22/10/2022
Duration:	1h
Location:	MS Teams

X

Figure 1. Please sign off to validate your view as part of this research member-checking protocol.

*Research Topic: **"The role of streamlining in digitalising business processes."***

***Main question**: How do business leaders and professionals streamline business processes in digitalising, and how is efficiency measured?*

One-to-one Interview Transcript

Interviewee:	ID07
Date:	28/10/2022
Duration:	1h
Location:	MS Teams

X

Figure 1. Please sign off to validate your view as part of this research member-checking protocol.

*Research Topic: **"The role of streamlining in digitalising business processes."***

***Main question**: How do business leaders and professionals streamline business processes in digitalising, and how is efficiency measured?*

APPENDIX C (Interview guide)

Interview Guide

Main research question: How do business leaders and professionals streamline business processes in digitalising, and how is efficiency measured?

1. **Tell me about your experience in streamlining and/or digitalising business processes?**
   1.1. What were/are the type of business processes you work(ed) on?

2. **What problems, challenges or opportunities led to streamlining and/or digitalising the business processes?**
   2.1. Was (is) this clearly defined, quantified, or measured?

3. **How did you improve the business processes without implementing digital technologies?**
   3.1. Was there a necessity to streamline before digitalising?
   3.2. What were the improvement techniques/strategies deployed?

4. **How did you use digital technologies to augment business processes?**
   4.1. How did you go about digitalising the business processes?

5. **How was the success measured or achieved? What are the measures of success?**
   5.1. Was efficiency achieved significantly in digitalisation without improving business processes?

APPENDIX D (Deductive thematic analysis)

Refer to Chapter 4. Presentation of findings: Tables 2, 3, and 5

Note: The various biases were minimised by selecting business professionals and consolidating their perspectives before making a conclusion, a member checking was used, and participants were given the transcripts through a follow-up email to validate their views.

The keywords of participants from P01 to P09 are summarised below:

Participant ID 01	Participant ID 02	Participant ID 03	Participant ID 04	Participant ID 05	Participant ID 06	Participant ID 07	Participant ID 08	Participant ID 09
• manual business processes • manual evaluation • digitized processes	• manual or paper-based process • real-time logs • escalation procedures	• manual and paper-based data collection	• Manual to automatic processes • ERP implementation	• Cost Manual analysis system • manual way of calculating and negotiating	• streamlining and integration of all supply chain processes.	• Manual Inventory process • Manually processing in Microsoft Office	•	• payments and collections process
• reduce queuing • Approval times • level Escalation • turnaround times • customer satisfaction • a window of opportunity • Speed up service	• information knowledge • information flow • Information sharing • decision-making • speed of gathering • accuracy point of view • speed and accuracy	• Visibility of Productivity parameter output • Optimise the process	• improve efficiency • company's growth • Big client base • turnaround time • Information Visibility • Transparency • different stages of approvals. • Manual process times	• Risk • Long turnaround • a strain on the human • fatigue, and human error. • It can't be accurate • losing concentration. • capture information • avoid delays	• to integrate all processes • reduce the turnaround • The business is growing • inconstancy in how the operation runs • how many touchpoints • voice of the customer	• big stock value • Manual accounting • Streamlining would be making the processes faster and more efficient. • more effective • more efficient • Management drive • time-consuming	• Driven by top management • lack of knowledge • misconception of the digital • lack of data to measure the process performance • Number of non-standardised processes	• enable businesses to work more efficiently • highly competitive environment • Regulatory compliance • Compete beyond borders • doing the basics right • Remove silos across the organization. • to have standard processes • customer satisfaction

	• inefficiencies • Traceability • Quick decision • efficiency, modernity, faster, reliability • Quick analysis		• customer satisfaction • Competition • Lack of data use • Employee dissatisfaction.			• It was a lot of work.		• inefficient processes • Ability to scale • inefficient processes • ability to grow • to minimize human interactions • Quality or error rate (internal)
• model the as-is • identify gaps • IE Tools • propose improvement intervention • opportunity to automate • streamline before digitalising • As-is relevancy • It depends on the requirement	• value stream mapping • key measurables, turnaround time, order cycle, different steps • Strategy such as ECS: Eliminate, combine and simplify processes. • Problem-solving • PMR, the Step 3 project • Kaizen • digital tools through the problem-solving	• three Ps: plant people process • Document and standardised processes • preventive and corrective maintenance • People's capability and competence	• Understand and map the current process • Process chart • swimlane diagram • putting the time • identify the problem and solve • finding causes of delay and the impact of manual intervention • Use the Why Ishika tool • taking one part of the business • The process of asking questions and checking what • Define the problem • Check people and competency • involving people. People are experts. • current processes and check the As-is. • do it in a system and eliminate specific tasks	• **to look at the as-is and what is available (opportunity)** • Qualitative and Quantitative techniques • Questionnaire/Survey • Voice of the customer (VOC) • getting in a room to brainstorm • Getting recommendations from customers. • Asking for ideas from customers • identified the issues • building relationships with stakeholders. • **Leverage technology or what is available** • be present to understand	• **understand the AS-IS** • Draft the as-is process • looking at what people do • Process mapping tool • Asking questions • Customer complaint description • time servicing • process mapping tool • lean sigma, Waterflow one • change management • employees are engaged • the voice of the customer. • understand and document the process as is • the data analytical	• time-consuming • No attempt to improve the process individually • Interaction with stakeholders	• Identify the As-is process, then be • Three approaches -See if there is any duplication -See if people use the process in the same way -What waste is in the system using six sigma through standardisation	• Benchmarking processes • to understand how you're currently doing it • Currently as-is and then going forward • Where are the pain points • how our competitors do it • Look overseas • Standardised to a certain extent, but flexible enough.

			• Plot the As-is and propose the future • simulating to see the scenario • drawn it on the board					
• Project management • System development life cycle: SDLC • RFP process • benchmark existing software • issue a tender • quest for a proposal	• research and development • Create a business case • bring a demo • decision-makers look into the proposal. • push-pull from vendors • Put a justification, a project brief, and a motivation. • Benchmark • case studies • project management • visiting other organizations	• tendering process • Vendor proposal • Third-party digital system • Project management • Change Management	• people involved • agreeing on the processes and steps with all stakeholders • all new roles defined • System demo • Pilot testing • user acceptance testing • Training	• Proper research to understand the as-is • bottleneck and pain points • **look for opportunities to digitise.** • Engaging with people	• saw the opportunity and brought the technology based on the challenge. • There was a need to prepare the data • project change management	• The research was done on SAP • SAP consultants	• Tendering process	• which areas can we automate quickly right • The maturity level is different depending on the industry. • specialised skills are available. hire specific black belt sigma. • Streamline is not structured like in a Power utility company • Banks have a huge budget to introduce improvement • to be flexible. A lot of structure won't allow it. • agile enough. The ability to change course. • A rigid structure won't happen. • needs to know the output and work for reverse engineering.
• • value analysis • anticipated benefits • project management • Streamline: higher efficiency • realizing our value from the investment? •	• the voice of the customer • operations requirements • service questionnaire • factory acceptance testing	• Project management • Project deliverables • Gaps closure analysis	• Compare before and after • satisfaction from your client • With a few clicks, they can find the information • The information is available • an SLA with the service provider	• test cases and train people afterwards. • Set targets and verification	• customer feedback • turnaround time	• Accuracy • Turnaround • Customer feedback • working harder than smarter before • improved our business and employee morale • Management visibility	• The automation is easy, optimise before digitalise. • 80% of digitalisation happens without optimisation because most people are skilled in automation	• The voice of the customer • Customer satisfaction was measured. Customer feedback and defined SLA. • External error: customer = Customised the experience

						• Management control and insight		
• As-is relevancy it depends; **get some good results** but with streamlining you get **higher efficiency.**	• doing value stream mapping It's possible, even though it is debatable. With **some 5% efficiency is guaranteed**	• People, Process and Plant It's going to **be a failure.**	• It is iterative checking and improving It is impossible because you **create more problems** than you had.	• Find a better way solution to hasten the process to make it as efficient possible to make it as accurate as possible. No, engaging people will help to improve; you need to understand the end-to-end value chain	• Streamlining is a process similar to change management; it needs to happen before, during and after. I would say a change of behaviour. And streamlining is all about answering why we're doing it. • What is our business? That is part of streamlining.	• Streamlining would be making the processes faster and more efficient.	•	• To streamline or increase efficiencies. • Companies don't go on and have sequential steps • Streamlining is almost embedded in there; much more could be done in that space before you even try and increase the suggested technology • a technology-driven streamlining • to customise the solution and configure it to specifications • you're almost configuring the inefficiencies.

APPENDIX E (Ethics approval notification)

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/DB2468296/507
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).

Project title	The role of streamlining in digitising business processes
Investigator / Researcher	MR Matondo Dunny Kulabuna
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed confidentialty.
Issue Date of Certificate	2022-09-02
Expiry date	Date of submission of the project / research report
Chairperson	Prof Anthony Stacey ☎ +27 11 717 3587 +27 82 880 4531 anthony.stacey@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

05-09-2022
Date: