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Maloka, Mologadi Betty

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The use of digital internal communications for operational excellence: A case study of African Rainbow Minerals (ARM)

Mologadi Betty Maloka

Professor Nixon Ochara

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

Johannesburg, 2024

ABSTRACT

This research paper employs a qualitative research methodology with a deductive approach to investigate the impact of digital internal communication on operational excellence, using African Rainbow Minerals (ARM) as a case study. The study recognises employees as primary stakeholders, contending that well-informed employees contribute to heightened productivity. Digital communication, facilitating information exchange and team collaboration, plays a pivotal role in the workplace. The study explores the use of digital communication tools for internal communication, customer interaction, teamwork, and overall productivity enhancement. Digital internal communication tools streamline feedback, idea expression, and collaboration, fostering a conducive environment for meaningful employee engagement. Effective internal communication is crucial for organisational culture, work enthusiasm, and stability during turbulent periods. The adoption of key elements in digital workplaces, including inclusion, reinvention, employee empowerment, and technological balance, is essential for achieving operational excellence.

The study reveals that ARM employees primarily use four digital tools for improved collaboration and communication. However, challenges like resistance to change and poor system implementation hinder communication system objectives. The research and proposed model underwent experts' evaluation for constructive feedback. The study emphasises the importance of aligning digital communication strategies with organisational goals, promoting inclusivity, and fostering adaptability. Integrating these recommendations into ARM's digital transformation strategy can lead to a more connected and agile workforce, enhancing operational excellence in the mining industry. The study concludes that digital communication is crucial for operational excellence but requires mutual understanding among key stakeholders in implementing digital tools.

KEYWORDS

Digital Communication, Digital Platforms, Digital Tools, Digital Transformation, Digital Technologies, Internal Communication, Operational Excellence.

DECLARATION

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



Name: Mologadi Betty Maloka Signature:

Signed at Johannesburg, on the 26th day of February 2024

DEDICATION

This paper is dedicated with boundless love to my cherished daughters, Thamiya and Kgalalelo. “In the tapestry of life, may you both always find the strength to believe in yourselves, the courage to empower your spirits and the encouragement to never stop learning. As you navigate the vast expanse of possibilities, remember that the world is not merely a stage; it is your oyster, waiting to unveil its countless pearls of knowledge and opportunities. May this dedication serve as a perpetual reminder that you possess the power to shape your destiny and illuminate the world with your unique brilliance.” Love, Mom.

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LIST OF ACRONYMS

ARM	African Rainbow Minerals
CRM	Customer Relationship Management
DIC	Digital Internal Communication
IoT	Internet of Things
IC	Internal Communication
ICT	Information Communication Technology
IM	Instant Messaging
IT	Information Technology
MQA	Mining Qualification Authority
OB	Organisation Behaviour
OpEX	Operational Excellence
OE	Organisational Effectiveness / Efficacy
4IR	Fourth Industrial Revolution
SQB	Status Quo Bias

CHAPTER 1. INTRODUCTION

1.1 Statement of Purpose

This research aims to explore how the internal digital communication of African Rainbow Minerals (ARM) can contribute to increasing the company's operational excellence (OpEx). Using qualitative methods within a case study approach, the study aims to examine contemporary methods of digital communication, their influence on information sharing across tiers of a company's hierarchy, employees' perspectives on the digital communication tools they use, and their usage patterns to gain insights into the communication process contributing to OpEx.

1.2 Background of the Study

Operational Excellence (OpEx) and Operational Efficacy also referred to as operational efficiency are two closely related terms because OE is a critical factor in achieving OpEx (Verma & Shrivastava, 2024). This is because an organisation must be effective in every aspect of management desires to achieve excellence (Verma & Shrivastava, 2024). In this way, it stands to reason that OE is one of the main drivers of OpEx.

According to Henriquez-Machado et al. (2021), OpEx is a managerial ideology that aims to enhance the efficiency and efficacy of organisations by perpetually refining their operational procedures. Empirical research suggests that OpEx can yield favourable outcomes for organisational performance. The benefits of OpEx most frequently cited by Sharma and Bhardwaj (2018) encompass the following:

- Enhanced levels of customer satisfaction.
- Decreased expenditures.
- Heightened levels of productivity.
- Improved employee morale.

The influence of OE on the performance of an organisation is contingent upon the circumstances. Bhasin and Burcher (2006); McAdam et al. (2019), conducted comprehensive analyses of empirical studies to evaluate the impact of OE on the overall performance of organisations. Amoako-Gyampah et al. (2019) further noted a positive correlation between OE and the indicators of performance enhancement, which include the following:

- Customer satisfaction.
- Cost reduction.
- Productivity improvement.
- Employee morale enhancement.

The study also noted that the influence of OE on organisational performance did not consistently yield uniform outcomes. The authors explored several factors that were potentially accountable for the variable effects of OE, which included the following:

- Specific OE practices that are implemented.
- The organisational context in which they are applied.
- The methods used to measure OE's impact.

Grunig et al. (1992) argued that the issue has not been adequately addressed. An examination of this segment shows that our comprehension of how internal digital communication enhances OE has not evolved significantly since its initial exploration. Most enterprises still fail to comprehend the importance of internal digital communication. Furthermore, an increasing corpus of scholarly research supports the perspective that internal communication awareness is deficient.

The fundamental basis of digital communication lies in the utilisation of digital data and the transmission and manipulation of this data through technological mechanisms. Digital communication encompasses various interactions involving humans, machines, and other machines (Bhasin & Burcher, 2006; McAdam et al., 2019).

This study focuses on how various forms of digital communication, such as email, social media platforms, instant messaging, as well as portable devices like tablet computers, smartphones, and wearable technology, play a significant role in enabling and enhancing online interactions and interpersonal communication within the workplace.

In contemporary digital communication, data, text, audio, and video exchange have become increasingly convenient and efficient (Tapscott, 2014). According to Tapscott (2014, p. 138), professionals in different geographical regions can exchange computerised documents, commonly referred to as 'digital documents'. These documents carry various forms of information, including data, text, audio, and video, and can be transmitted at the speed of light.

This study focuses on how employees in a South African Mining company, African Rainbow Minerals (ARM), can enhance digital communication practices to increase OpEx. The primary challenge for organisations lies in the use of digital platforms for internal communication practices. Effective communication with employees can aid in building organisational commitment, achieving positive business outcomes, influencing corporate reputation, sharing knowledge, gaining trust, instilling a sense of belonging, creating awareness, and engaging employees (Dortok, 2006; Kalla, 2005; Yates, 2006; Welch & Jackson, 2007; White et al., 2009).

1.3 Context of the Study: The Mining Sector in South Africa

The mining industry plays a pivotal role in South Africa's economic advancement. The nation possesses a substantial reserve of mineral resources, which has positioned it as a prominent global supplier of valuable metals, minerals, and gemstones (Jones, 2020). Since the late 19th century, the mining sector has been a driving force in South Africa's economy, with the discovery of gold and diamonds in the latter half of the century leading to a substantial surge in mining activities, enticing a diverse array of investors and migrants globally (Magunda & Du Toit, 2020). This era, commonly known as the Mineral Revolution, elevated the nation to a leading position in the international mining sector, making it the

foremost producer of gold with substantial reserves of various minerals, such as platinum, coal, and manganese, and profoundly influencing the nation's economic landscape (Jones, 2020; Wright, 2016).

Despite its historical significance, the mining sector in South Africa encounters various challenges (Singh, 2017). Labour unrest, characterised by frequent strikes and conflicts regarding remuneration and working conditions, poses a significant concern, leading to significant disruptions in production and strained relationships between mining companies and labour unions (Hodge, 2019; Magunda & Du Toit, 2020). Aging infrastructure is an additional obstacle, necessitating substantial financial commitments for modernisation and enhanced safety protocols.

Moreover, environmental issues are also a concern, as highlighted by Wright (2016). The mining industry has been responsible for detrimental impacts on the natural environment, such as soil erosion, water contamination, and land degradation (Schenck et al., 2019). The implementation of government regulations and guidelines aims to address these issues, but effective enforcement of environmental standards remains a challenge. Hence, the enforcement of environmental regulations within the mining industry should be strengthened (Jones, 2020).

Despite these obstacles, Jones (2020) suggests that the mining industry in South Africa exhibits the capacity for expansion and rejuvenation. The nation possesses considerable unexplored mineral reserves, specifically in platinum-group metals, manganese, and coal. Expansion in mining operations and improved extraction techniques could foster increased production levels and economic growth.

Furthermore, it is noteworthy that the South African government has acknowledged the need for sustainable mining practices, as Hodge (2019) mentioned. Efforts such as the Mining Charter and the Integrated Resource Plan aim to foster responsible mining practices, support local communities, and preserve the environment. These endeavours align with international patterns favouring environmentally friendly mining practices and can attract investments and improve the long-term sustainability of the sector.

The examination of the obstacles encountered by the mining sector in South Africa offers prospects for achieving sustainable growth and development. According to Magunda and Du Toit (2020), efforts to enhance labour relations, advocate for equitable remuneration, and improve working conditions have the potential to foster a more stable and productive industry. Singh (2017) asserts that streamlining the regulatory framework and reducing bureaucratic procedures can attract investment and stimulate exploration activities. In addition, the adoption of responsible mining practices and the establishment of comprehensive environmental management systems can alleviate the adverse effects of the mining sector and improve its social acceptance (Schenck et al., 2019). It can be asserted that the mining sector in South Africa possesses a significant historical heritage and remains an indispensable element of the nation's economic framework.

1.4 Research Problem

The advent of digital media has revolutionised operational performance and human communication, and the accelerated pace of communication is one example of systemic shifts in modern society and the workplace (Menz et al., 2021). While the goal is often to save time and optimise resources, the flip side of faster communication is the potential lack of impact measure.

Tshabalala and Marnewick (2021) illustrated how acceleration is relative to the observer. In terms of addressing acceleration, Martin (2019) asserted that the currently employed methods demonstrate unprecedented effectiveness, stating, "Our tools are way superior to what they have ever been" (p. 33). Therefore, organisational performance can be handled better with tools and technology. However, a fundamental flaw exists in this argument: OpEx achieved through such acceleration processes may be bolstered by these technologies themselves, setting off a cycle that is difficult to break because technological innovations may influence users' habits (Entschew & Suchanek, 2017).

Time can be saved, for instance, by using email instead of traditional mail for correspondence, demonstrating a more efficient communication method.

However, professional expectations in the context of digital communication often entail hidden assumptions of permanent availability, suggesting increased expectations for response speed (Entschew & Suchanek, 2017).

Within larger entities, a common response to acceleration is an increase in information processing through the constant use of communication technologies at work (Menz et al., 2021). This self-reinforcing acceleration cycle would be completed if new technologies made it easier to manage the rise in information volume. Although we are saving time through acceleration, questions arise about how a lack of time influences user behaviour.

It is widely believed that a 1% improvement in efficiency through technological development results in a 1% reduction in resource consumption (Binswanger, 2001). However, the reduction is often less than 1% or occasionally increases (Binswanger, 2001). Additionally, members of the organisation may fail to recognise or comprehend such nuanced shifts in digital communication (Derks et al., 2022). Managers often make decisions based on a short-sighted view of the future, a phenomenon known as managerial myopia (Larwood & Whittaker, 1977). A chronic lack of time, for example, can prevent a sustainable energy level in the organisation, but if both conditions exist, this may go unnoticed.

To recognise such effects, one must have a comprehensive understanding of their (digital) surroundings, as accelerated OpEx is a fundamental aspect of the operational environment. In addition, the problem must be recognised, and the will and resources to address it must exist for proper control of the acceleration cycle.

African Rainbow Minerals users/employees exhibit resistance to technological changes that can improve communication and efficiency within the organisation. Internal communication platforms such as emails, screen savers, pop-ups, and the intranet remain underutilised, as many still prefer traditional communication methods, such as face-to-face interactions, for all communication purposes. This study will endeavour to delve into these issues.

1.5 Research Objectives

The primary objective of this study is to investigate the use of digital communication technologies across the top, middle, and bottom levels of ARM and how this engagement contributes to OpEx. The research questions being dealt with are as follows:

i. How do employees at ARM engage in internal digital communication practices?
ii. What is the effectiveness of digital internal communication within ARM according to employees?
iii. How do digital platforms contribute to achieving OpEx in internal communication at ARM?
iv. What recommendations can be made to address existing barriers to the use of digital communication within ARM?

1.6 Rationale

This study is crucial because it examines the impact of internal communication on employee engagement and productivity (Bucăţa & Rizescu, 2017). Poor internal communication can result in misconceptions, reduced morale, and a lack of alignment with organisational objectives, ultimately impeding operational effectiveness. The study seeks to offer practical suggestions that will help public relations practitioners enhance the performance of their company's personnel by addressing these concerns.

Efficient internal communication is paramount for cultivating a collaborative and productive work environment. Organisations can enhance communication techniques to boost employee engagement, which has a direct correlation with increased productivity levels and improved OpEx. Moreover, top executives can employ this data to make well-informed choices, opting for the most effective communication approach or policy to enhance productivity in the workplace. This involves selecting suitable digital communication tools and platforms that enable prompt and unambiguous information interchange.

This analysis will also serve as a credible reference for other academics and researchers researching the role of internal communication in an organisation. This study emphasises the significance of internal communication as a crucial factor in achieving operational efficiency and excellence, by connecting the findings to the concept of OpEx. Efficient communication methods are essential for ongoing improvement efforts, which form the foundation of OpEx. This research offers a framework that integrates communication tactics with OpEx principles, enabling organisations to achieve long-lasting performance enhancements.

1.7 Delimitation of the Study

This study relies solely on on-site visits conducted at the three levels of management for empirical data. No adjustments have been made to the analysis or suggestions to reflect any potential developments at different organisation levels, rather, daily control and visual management, workplace organisation, and continuous improvement are the sole focus areas because they are directly related to OpEx.

Only two locations have been established for this study, investigating three levels of employees: senior/executive management, line/middle management, and operational staff, who actively use digital platforms for communication. The intent is to obtain a broad picture of how digital communication tools change the communication dynamics within a company's hierarchy. However, besides the aforementioned case study, no other organisations will be included in this study. While the stakeholders in internal communication extend beyond employees, this thesis exclusively considers employees.

1.8 Definition of Terms

In the context of this study, the term 'digital' pertains to the creation, processing, or transmission of information utilising computer technology, as defined by Fischer et al. (2023).

- Digitisation is the transformative procedure of converting various forms of data, messages, and resources into digital formats (Luppicini, 2018). This process entails converting analogue or physical data into a digital format, enabling accessibility and manipulation via computer systems.
- Digital communication tools, as defined in this study, primarily encompass the utilisation of electronic mail and the organisation's internal network, commonly referred to as the company intranet (Luppicini, 2018). The study also investigates the utilisation of social media as a digital means of communication.
- Internal communications refer to deliberate and coordinated efforts within an organisation to facilitate the sharing of information and ideas among different levels of management, thereby influencing decision-making processes (Welch & Jackson, 2007). This study specifically centres on employees as stakeholders.
- OpEx, as articulated by Kholil and Amri (2022), refers to the ongoing endeavour to enhance performance and achieve favourable financial outcomes throughout all tiers of an organisation. The concept in this study entails attaining elevated levels of efficiency, productivity, and effectiveness in operational processes and activities.

1.9 Assumptions

The key assumptions in this study are:

1. The levels of proficiency with digital communication technologies as a potential source of major bias in the workplace: Less tech-savvy workers may be less likely to make effective use of digital communication tools, impacting communication patterns and results.
2. Access to digital devices: Communication gaps or inequalities may exist if some workers lack access to devices or stable internet connections, preventing them from fully participating in digital communication.

3. The level of comfort with digital communication: Not everyone is comfortable using email or instant messaging, and some employees may prefer more personal interactions.
4. The level of success to be achieved with digital communication across all organisational structures: Communication styles that work well in hierarchical organisations may not be appropriate for those in flat organisations, and vice versa.
5. Compliance with policies on internal communication: It may be unrealistic to expect all employees to adhere to the same policies on internal communication. Communication patterns and results may change depending on how the policy is interpreted or implemented.

1.10 Chapter Outline

Chapter 1: This introductory chapter provides a background on the organisation, the research problem, the study's objectives, research questions, rationale, delimitations, definitions of terms, and assumptions underlining the study.

Chapter 2: Literature review: This chapter details the findings of numerous studies on internal digital communication as well as the strategies employed by other researchers to arrive at their conclusions. The consequences of poor internal communication are also explored in this chapter, providing a theoretical framework of the function and effect of internal communication on an organisation.

Chapter 3: Research methodology is discussed from a qualitative perspective, presenting information on the population, data collection methods, and interview questions. Methods and tools for analysing and interpreting data are also discussed.

Chapter 4: The chapter presents the study's results and information about the process followed to organise and present the data and key aspects associated with presenting the results.

Chapter 5: The chapter discusses the results presented in Chapter 4 and framework developed for digital communication transformation and OpEx. It discusses the findings, maps the components of the conceptual framework, and proposes the framework for digital communication transformation and OpEx using systems thinking.

Chapter 6: The chapter focuses the conclusions and recommendations of the study are also presented, with suggestions on how the company can improve its internal communication to overcome a lack of communication with its employees and achieve its goals.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter aims to establish a foundational background on the subject matter, exploring current perspectives on digital communication, the selected theories, and the concept of OpEx. It explores how these elements are linked to internal digital communication within an organisation.

Digital media transformed organisational communication and organising in the 20th century (Beverungen et al., 2019). Looking ahead, the development of digital convergence and information and communication technologies (ICT) is expected to create new organisational communication channels. Empirical research reveals that adopting ICT along with changes to organisational structure and work practises, such as enhanced teamwork, revised business procedures, and increased decision-making power, is economically beneficial (Francalanci & Maggiolini, 2002).

This chapter also addresses the 'IT investment', which refers to justifying and assessing IT investments (Wessels, 2003). Organisational ICT investment evaluation methods are suggested in the literature as they offer an understanding of the role of digital internal communication in organisations.

2.2 Contextualising Operational Excellence

The significance of OpEx cannot be overstated, particularly in expansive, asset-heavy facilities such as those prevalent in the process manufacturing and power sectors (Venkatesh et al., 2016). Given the substantial scale of the operations phase compared to the installation (project) phase, OpEx becomes more crucial. In addition to projects, OpEx, as the fundamental element of an organisation's value chain, serves as the driving force behind the expansion and growth of process industries.

Numerous industries share similar business goals, including establishing a safe workplace free of incidents and injuries, reducing environmental and process safety hazards, sustaining competitiveness, maximising asset efficiency, and prudently utilising natural resources. To achieve these business objectives, industrial enterprises must align leadership and teamwork while fostering a constructive, problem-solving approach and an unwavering aspiration for excellence.

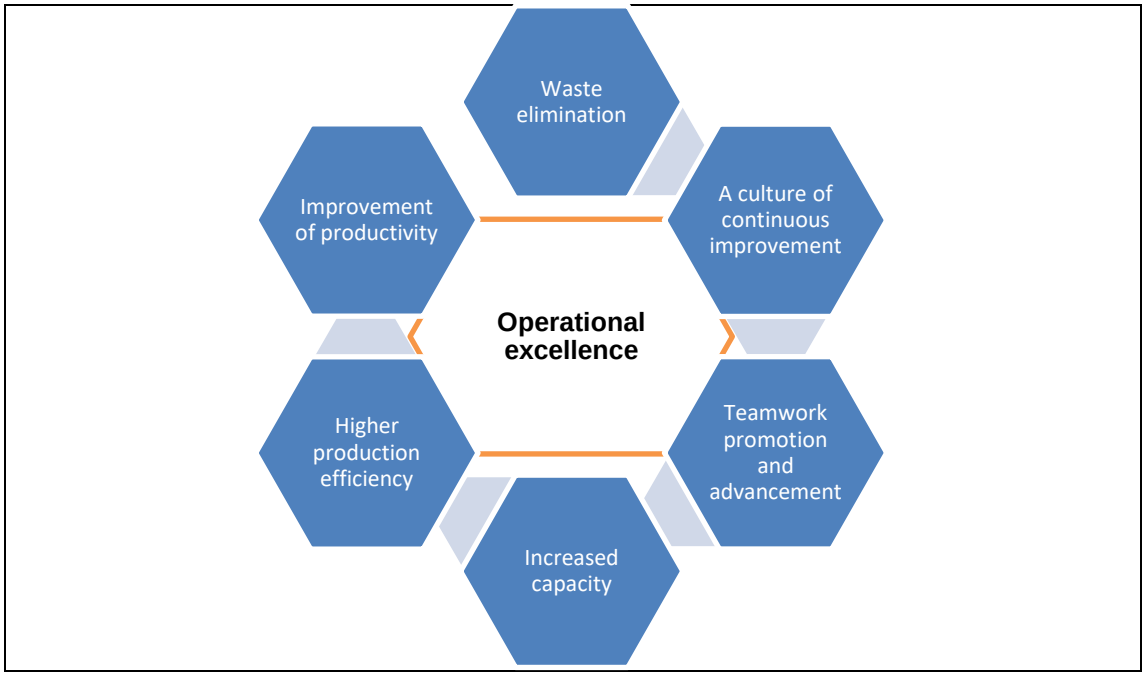
According to Venkatesh et al. (2016), OpEx includes the strategic implementation of novel technologies and capabilities to integrate productivity across all facets of the enterprise. However, the scope of OpEx extends beyond technology, encompassing an organisation's ability to transform intricate situations into favourable circumstances and exhibit resilience and agility in the process. This involves the ability to leverage disruptions and convert them into competitive advantages (Chan, 2019). Operational Excellence is a process that involves progression over time and requires a deliberate and systematic approach towards enhancing efficiency and effectiveness by implementing a well-designed roadmap, aiming to optimise and streamline foundational processes. It directs attention towards technological advancements that can adapt alongside the enterprise and its personnel.

Kholil and Amri (2022) defined OpEx as a persistent quest for enhanced performance and financial outcomes across all levels of an organisation. Operational Excellence is not merely viewed as a methodology but rather as a culture that should permeate every department. Several operational principles, including daily control and visual management, workplace organisation, and continuous improvement, are grouped under the umbrella of OpEx, as described by Ajoje (2015).

However, Ajoje (2015) also argued that OpEx is more than the application of sub-methodologies, emphasising that these activities can result in significant operational improvements and 'excellence' for the organisation. According to Ajoje (2015), the following areas can be enhanced or optimised through the application of OpEx principles.

Figure 1

Application of Operational Excellence Principles



Source: Ajoje, 2015

According to Ajoje (2015), OpEx is achieved when a company's resources are strategically focused on increasing the value of its operations from the customers' perspective. Operational Excellence aims at maintaining and enhancing quality, providing efficient service at low cost, and delivering exceptional value to customers. To attain these goals, strong leadership, employee empowerment, adoption of industry best practices, and the use of value-adding technologies are required.

To implement OpEx as a strategic approach, an organisation must consider several key factors, including personnel, technology, culture, and capability. These pillars are interrelated and interdependent, each contributing essential value propositions to the enterprise, propelling it towards robustness and eminence. According to Jengwa and Pellissier (2022), many organisations have already implemented OpEx strategies. However, this approach should be viewed as a component of the organisation's ongoing improvement programme rather than a mandatory requirement. The perpetuity of the process is due to its all-encompassing nature, extending to every touchpoint within the organisation, with

components such as systems, tools, processes, and individuals collectively contributing to the overall functioning of the entity.

2.3 Theoretical Framework

This section discusses various theories related to the utilisation of media in organisational communication. The Status Quo Bias (SQB) theory underpins this study.

2.3.1 *Genre Theory of Organisational Communication*

According to Yates and Orlikowski (1992), a certain classification of organisational communication denotes a standardised and repetitive communicative act, distinguished by its communicative objectives and, to a certain degree, its structure. They posited that the communicative purpose encompasses the social motivations and subjects conveyed within a repetitive communicative context. In this discussion, the form incorporates distinct structural attributes, modes of communication, and symbols used to represent data, all of which are widely recognised and accepted within the academic community. According to Yates and Orlikowski (1992), a genre can be enacted to varying degrees within a community. Further, Schultze and Boland (1997) suggested that genres can be classified on a spectrum ranging from hard to soft. In this study, a soft genre involves the utilisation of diverse modes of communication to convey instances of the genre, consequently influencing the diversity of forms present within the genre and its implementation.

According to Yates and Orlikowski (1992), every community, including an organisation, possesses a set of associated genres. Documents containing requirement specifications, project plans, project meetings, and budget documents are some common types of communication tools that a software development entity typically uses to facilitate communication. According to Yates and Orlikowski (1992), genre systems can be created when a collection of genres interact in the context of a broader communicative process.

As Päivärinta (2001) noted, genre theory has attracted interest in information systems research since the 1990s. Previous studies have made empirical attempts to identify the repertoires of organisational genres, revealing the existence of numerous genres within organisations. This approach is deemed to offer a comprehensive and easily understandable perspective on organisational communication, as reported by Tyrväinen et al. (2005).

Päivärinta et al. (2001) introduced a practical method for identifying and analysing genre repertoires, demonstrating its effectiveness in information systems development efforts (Päivärinta, 2001). Päivärinta et al. (2001) also proposed the use of genre taxonomies as a theoretical framework for evaluating communication strategies among various organisations. Therefore, genre theory is deemed appropriate for drawing comparisons and understanding a conceptual framework to achieve research objectives.

2.3.2 *Theories of Media Use in Organisational Communication*

Since the mid-1980s, there have been several influential theories regarding the use of media in organisational communication. This study draws upon two extensive literature reviews, namely the one conducted by Carlson and Zmud (1999) and the other by Ngwenyama and Lee (1997). Several influential theories have been proposed in the field, such as the critical mass theory (Markus, 1987), the social influence model (Fulk et al., 1990), the “emergent network perspective” (Contractor & Eisenberg, 1990, p. 12), channel expansion (Carlson & Zmud, 1999), critical social theory (Ngwenyama & Lee, 1997), and the genre theory of organisational communication (Daft & Lengel, 1986).

Daft and Lengel’s (1986) media/information richness theory, further developed by Trevino et al. (1990), posits that the level of ambiguity in a message is inherently linked to the medium employed. The theories emerging in the 1990s, particularly those about social definitions, highlight the idea that the characteristics of a medium in isolation inadequately explain the correlation between media usage and organisational communication.

According to Markus (1994) and Ngwenyama and Lee (1997), it is more appropriate to consider the phenomenon as a multifaceted interplay among technology, individuals, and the organisational environment. The most extreme perspective suggests that the concept of pure technology does not exist. Contractor and Eisenberg (1990) asserted that technology and media exist independently of any socio-organisational context, suggesting that communication technologies can operate independently of the institution where they are deployed.

To understand digitalisation, it is necessary to employ analytical concepts that effectively structure the fundamental characteristics of media and the socio-organisational contexts of communication, establishing meaningful connections between these elements. Sillince's (1997) theory on media attributes and design choices posits seventeen generic media attributes and strives to establish a direct correlation between two of these attributes and the organisational design choices that impact communication.

However, none of the theories in isolation were directly applicable to conceptualise both communication media and their contextual application to the research objectives.

2.3.3 *Status Quo Bias Theory*

The foundational theory behind this research is the 'status quo bias' (SQB), which seeks to explain why people prefer things the way they are. The SQB is the tendency of people to resist change in favour of the familiar, as evidenced by studies conducted by Samuelson and Zeckhauser (1988), as cited by Polites and Karahanna (2012). Individual decision-makers are biased toward maintaining the status quo (keeping one's current or previous decision) when contemplating a new course of action (Polites & Karahanna, 2012; Samuelson & Zeckhauser, 1988).

Both a cognitive illusion and a natural human tendency contribute to the SQB that manifests itself in everyday decision-making. Individuals may be content with their current situation because it is familiar and easy to use, they have become

accustomed to it, are comfortable with it, have strong beliefs about it, and are attached to it (Samuelson & Zeckhauser, 1988). Samuelson and Zeckhauser (1988) highlighted several elements of the SQB theory that may help to understand ICT decision-making within an organisation. These are highlighted below.

2.3.3.1 Cognitive Biases

The concept of bounded rationality, introduced by Simon (1955), gave rise to the notion of cognitive biases. Simon hypothesised that the cognitive limitations of humans, such as computational abilities and access to information, constrain their capacity to make fully rational decisions. This study challenges the conventional model of homo economicus, which posits that individuals consistently strive to maximise their overall utility by making decisions with complete information (Doucouliagos, 1994). Simon (1955) identified limitations that can result in the distortions researchers subsequently conceptualised as cognitive biases. According to Haselton et al. (2015), biases occur when individuals make inferences or embrace beliefs with insufficient or absence of logically sound evidence.

Kahneman and Tversky (2013) introduced cognitive biases through their initial three heuristics: representativeness, availability, anchoring, and adjustment, utilising the notion of bounded rationality. They demonstrated that individuals tend to have biased perceptions of statistical information. In an experimental setting, participants were asked to indicate the likelihood of a previously described student being a bank teller or a feminist bank teller. Most of the participants selected the latter option. The decision made was influenced by the representativeness heuristic, based on pre-existing information indicating that the student identified as a feminist, potentially indicating a bias. Likewise, the participants tended to have a prejudiced judgment when queried about the probability of a specific occurrence. After these initial discoveries, numerous additional biases were investigated. As identified by Benson (2019), 188 biases were identified. Section 2.2 elaborates on the SQB, which is among the biases identified after the discovery by Kahneman and Tversky (2013).

As noted above, SQB is a phenomenon referring to the tendency of individuals to prefer the current situation over potential changes, even if such changes could lead to a more favourable outcome. This deviation from the established norm in the individual's behaviour occurred on a single occasion. Samuelson and Zeckhauser (1988) experimented to demonstrate the universal applicability of this effect. The study comprised two distinct treatments administered to the participants. In treatment 1, participants were informed about inheriting money from an uncle and were presented with four investment options. In the second iteration, the participants were subjected to a comparable intervention, albeit with the additional knowledge that their uncle had already allocated the funds towards one of the available alternatives. In treatment 2, the subjects exhibited a higher tendency to opt for the option that had been pre-selected. Samuelson and Zeckhauser (1988) proposed three distinct categories of explanatory approaches for this bias: cognitive misperception, rational decision-making, and psychological commitment.

2.3.3.2 Cognitive Misconception

Samuelson and Zeckhauser (1988) introduced the concept of loss aversion, originally introduced by Kahneman and Tversky (1979). Kahneman and Tversky (2013) demonstrated that the perception of value among individuals, as a component of prospect theory, was influenced by the phenomenon of losses being perceived as more significant than gains. According to Kahneman and Tversky's research in the Seventies, people tend to prioritise avoiding minor losses over obtaining significant gains. Further, Samuelson and Zeckhauser (1988) suggested that individuals tend to exhibit a preference for maintaining the status quo due to the perception of unrealistically large potential losses in the context of change.

2.3.3.3 Rational Decision-Making

Rational decision-making involves making decisions based on logical reasoning and sound judgment. The rationale behind SQB can be explained by an individual's desire to minimise uncertainty and the expenses associated with change (Samuelson & Zeckhauser, 1988). Uncertainty costs arise from a lack of

prior knowledge regarding the value of a particular good or service. Consequently, individuals tend to adhere to brands with which they have had favourable experiences. Likewise, it could be deemed logical to maintain a business relationship with the current supplier, given that switching would necessitate an expenditure of resources for a thorough due diligence process, while the expenses associated with the present alternative have already been incurred.

Therefore, maintaining the current situation may be a wise decision. In this context, it could be contended that individuals tend to make analogous choices when confronted with comparable alternatives. The limitations of rational decision-making become apparent when attempting to account for the tendency of individuals to opt for the status quo despite potential greater benefits outweighing any associated transactional or uncertain expenses.

2.3.3.4 The Psychological Commitment

Status Quo Bias is commonly known as the sunk cost effect, indicating an increased inclination to persist in a particular course of action after an initial investment of resources, such as finances, labour, or time. Arkes and Blumer (1985) suggested that individuals tend to rationalise their behaviour to avoid the notion of wastefulness. In a broader context, the term sunk costs can pertain to the competencies associated with the prior mode of operation that individuals may forfeit because of a transition, such as the time that individuals had dedicated to acquiring skills and knowledge for the present mode of operation.

Kim and Kankanhalli (2009) proposed that the introduction of a new technology may render previous training obsolete, resulting in a sunk cost. Furthermore, scholarly investigations indicate that social influence, as expressed through the opinions of friends and colleagues, significantly impacts their SQB. Additionally, individuals' perceived level of control also affects their SQB, reflecting the level of assurance the user possesses regarding their comprehension and ability to manage the alteration (Samuelson & Zeckhauser, 1988).

The first model for measuring all three components of SQB was created by Kim and Kankanhalli (2009), with a primary focus on the environment of technology

use or adoption. Within the context of an Enterprise Resource Planning system implementation, certain parts of this model were successfully tested by Kim and Kankanhalli (2009). A subsequent analysis of the literature citing Kim and Kankanhalli showed an excessive emphasis on rational decision-making explanatory methodologies by scholars (Lee & Joshi, 2017). In addition, Wu (2016) conducted the most comprehensive meta-analytic evaluation of SQB in the context of technological adoption. The author confirmed the results of previous research on the relationships between constructs.

2.4 Analytical Framework

The present study employs an analytical framework that offers a synthesis of the theoretical and empirical constructs, shaping the investigation. This tool functions as a conceptual instrument to analyse and interpret collected data, as well as comprehend the interconnections among various variables. The framework establishes a basis for the systematic organisation and integration of the current knowledge and theories pertaining to the research subject.

This analytical framework integrates theoretical concepts derived from pertinent literature with empirical insights acquired through data collection and analysis. Established theories, models, or frameworks from the field of study are employed, fostering a holistic comprehension of the research phenomenon, and expediting the investigation of research inquiries or hypotheses through the amalgamation of theoretical and empirical constructs.

The integration of theoretical and empirical concepts within the analytical framework establishes a systematic framework for conducting research, guiding the choice of research methods, data collection strategies, and analysis techniques. This process of identifying pertinent variables, establishing their interconnections, and formulating hypotheses or research inquiries benefits researchers. Furthermore, the framework aids in discerning deficiencies in the current body of knowledge, fostering the production of novel perspectives and facilitating the derivation of meaningful conclusions, thereby contributing valuable insights into the existing body of knowledge within the field.

2.5 The Effects of Technology on an Organisation

The ancient Greek words ‘techne’, meaning art, and ‘logia’, meaning logic, are the root of the modern English word ‘technology ‘(Jose et al., 2020). In everyday language, 'technology' is commonly understood as the application and mastery of human-made instruments and processes. Concerning the establishment of an efficient communication system within an organisation, technology plays a pivotal role. It is not just a tool for improvement (Molinero, 2012) but utilises data in creating tools and learning techniques. Operational Excellence and competitiveness can be improved with the help of technology. Since their objectives differ, businesses employ various technological solutions to ensure long-term viability.

The impact of technology on company-wide communication has been transformative, influencing organisational procedures, decision-making, and structure (Molinero, 2012). To achieve coordination and manage relationships within and between organisations, computer-mediated communication technology is superseding the traditional hierarchical structure (Daft & Lewin, 1993). Electronic communication serves as the lifeblood of contemporary businesses, enabling their functionality and growth. In so-called 'virtual electronic organisations,' where information is disseminated freely rather than being restricted, controlled, and utilised as a source of power, this technology plays a crucial role in enhancing overall effectiveness (Daft & Lewin, 1993, p. 91).

Communication technology has new capabilities that may affect both the structure and fundamentals of the communication process. The evolution of communication systems may impact productivity and performance in the workplace in the long run (Majchrzak et al., 2013). As noted by Kulkarni and Kulkarni (2018), computer communication appears to alter the overall direction, quantity, and diversity of communication links.

2.6 Technology and Internal Communication

Akin to humans who require a central nervous system to coordinate their activities, businesses require an internal communication mechanism. Molinero

(2012) noted that humans innately desire connection, empathy, and esteem. The term ‘internal communication’ encompasses not only the dissemination of information but also the exchange of ideas and the coordination of efforts between employees through formal and informal channels (Rho & Lee, 2018). It is a two-way channel necessitating communication on both ends, thereby encouraging dialogue, active listening, relationship-building, and idea-sharing. Decisions at all levels can be supported by evidence and reason if an open and honest communication system exists within the organisation. In a multicultural and multilingual setting, it serves as both a management tool and a form of expression.

In today’s global, information-based economy, the inextricable bond between technology and communication is undeniable. Organisational growth and goal achievement are dependent on open lines of communication between management and staff at all levels. It also relies on the company’s ability to train its staff to use various communication methods effectively (Lee & Im, 2018).

The introduction of a new system can influence how organisations are structured and can lessen the complexity of those structures (Rho & Lee, 2018). However, new forms of electronic communication are accelerating the decision-making process and altering the dynamics within businesses. Technologies such as the Internet are simple to implement, inexpensive, and improve internal communications because they facilitate more connections. Organisations can now communicate with members all over the world in real-time (Majchrzak et al., 2013). Most importantly, technology facilitates inter-organisational coordination by helping businesses cut costs and expand their capacities.

Kulkarni and Kulkarni (2018) noted that a lack of internal communication poses a challenge for companies in managing their employees, notwithstanding the numerous trends impacting employment relationships. Some challenges arise from the external environment, while others arise from the internal setting. Technology is among the most significant external forces impacting businesses today, converting resources into useful products. This broad term includes machines, tools, procedures, knowledge, and experience (Majchrzak et al.,

2013), and they significantly impact companies' service markets and production procedures, among other areas.

Technology can impact the organisational structure at every level. At the input stage, environmental factors are effectively managed by technological skills, systems, and procedures (Jones et al., 2010). Decision-making, information processing, and communication coordination are all influenced by technology, regardless of the size of the organisation. The Internet and IT have helped businesses reduce operating costs, enhancing competitiveness. Companies in the manufacturing, banking, and retail sectors have all benefited from integrating with the Internet, resulting in reduced expenses, improved customer service, and faster delivery of high-quality products and services.

Today's businesses actively adopt cutting-edge technologies to improve their competitive position in the marketplace. Marketing, manufacturing, and even human progress have been revolutionised by technological advancements. These days, technological decision-making is grounded in scientific research and analysis, making it more precise, reliable, and cost-effective. Technology has also been instrumental in financial analysis and management. The ever-evolving nature of technology significantly influences the unpredictable financial markets, with companies diverging due to their specialisation in various technologies (Munteanu & Racherla, 2020).

2.6.1 *Analysis of Internal Digital Communication Practices and Tools*

Throughout history, organisations have utilised a range of tools, including corporate television, wall posters, and corporate publications, for internal communication. These tools have traditionally operated as unidirectional dissemination mechanisms, enabling communication from one source to multiple recipients. Beirne and Cromack (2009) argue that the incorporation of computer-mediated communication and electronic resources holds considerable promise for fostering employee engagement in practical endeavours. The categorisation of new digital communication channels is discussed in various ways within the academic literature.

In contemporary scholarly discussions, the terms ‘social media’ (Kaplan & Haenlein, 2010, p. 22) and ‘new media’ (Hennig-Thurau et al., 2010, p. 34) are frequently used to portray a changing landscape of communication. According to Kaplan and Haenlein's classification (2010), social media can be divided into six distinct groups: collaborative projects, blogs, content communities, social networking sites, virtual game worlds, and virtual social worlds.

When considering the use of internal social media, a key factor to consider is the promotion of collaborative efforts that enable multiple individuals to create content simultaneously. Kaplan and Haenlein (2010) posited that collaborative projects involve various digital tools such as wikis and social bookmarking applications, which facilitate the aggregation and evaluation of web links or media content by groups of individuals. The growing need for digitalisation and integration of ICT has resulted in the extensive utilisation of intranet. According to Cugno et al. (2021), the varied methods an organisation employs can result in a barrier rather than openness. Therefore, it is essential to discover communication methods that meet the requirements of the organisation and the employees.

According to Christensen and Cornelissen (2011), organisations must communicate with a greater number of individuals than in the past to conduct business in a global environment. Digital tools make it possible to have discussions and meetings regardless of location or time difference. Reinsch et al., (2008) argued that digital tools for communication obscure the distinctions between time and space. Using digital tools enables a continuous conversation almost anytime and anywhere. Digital tools can enhance an organisation’s productivity, efficiency, and quality, providing a comprehensive view of the organisation (Attaran et al., 2019).

The above asserts that an intranet’s optimal functionality is achieved when it offers individuals comprehensive access to the essential resources required to execute their job responsibilities. These resources encompass timely updates, administrative materials, and newsletters disseminated by senior management. According to the findings of Mosbeh and Soliman (2008), the implementation of an intranet system enables effective communication among colleagues,

regardless of their physical distance or the specific hardware and operating systems they utilise.

In addition to facilitating information transmission, an intranet can function as a valuable instrument for evaluating performance and providing accurate data on significant strategic issues to assist managers in their decision-making process (Denton, 2006). However, platforms such as intranets may not enhance inter-functional coordination unless they are appropriately designed, or employees possess a comprehensive understanding of their advantages. According to White et al. (2009), many employees seem to lack sufficient time to peruse websites for information. Denton (2006) observed that, apart from intranets, there exists a critical need for technological solutions that facilitate the comprehension of the copious amounts of data circulating, both for employees and managers. According to Stenmark's (2004), the effectiveness of an intranet is contingent upon the willingness of organisational management to delegate authority to employees, enabling them to participate more actively in the development of the information architecture.

Blogs can serve as a valuable tool for internal communication by facilitating the dissemination of information to employees. According to De Pelsmacker et al. (2021), blogs are online platforms functioning as personal journals for authors to share their thoughts and ideas. Readers are also allowed to provide feedback on the content through comments. Blogs serve as a valuable instrument for companies to influence public discourse through precise information. Smudde (2005) observed that the communication style of corporate blogs is less informal than that of non-corporate blogs.

Furthermore, the involvement of top management in corporate blogs renders them attractive and valuable. Audiences demonstrate a strong interest in obtaining insider perspectives from high-level individuals. Several corporations, such as Microsoft encourage their staff to maintain blogs on their official websites (Kelleher & Miller, 2006). Regarding contemporary media tools, social networking platforms, such as Facebook, are increasingly employed for external communication. Nevertheless, numerous organisations also utilise these platforms for informal internal communication.

Although various social tools are available for use in IT, email continues to be the predominant digital communication medium utilised in contemporary organisations due to its affordability, accessibility, simplicity, and expediency. Some other advantages of emails include reviewability and revisability, which are not possible in oral communication. Reviewability pertains to the ability of each participant in the email exchange to maintain a record of the comments made by others, while revisability refers to the option to review and amend a message before sending it (Friedman & Currall, 2003).

However, the discourse regarding the disadvantages of email as a means of communication persists, as written communication may not always be the most effective means of conveying a message or inspiring employees. According to Brewerton and Millward (2001), electronic communication channels have resulted in physical and emotional separation among employees and their affiliated organisations. Further, the expeditious and effortless dissemination of information through emails may result in an inundation of information and excessive dependence on technology-mediated channels, potentially impacting interpersonal communication. A lack of synchronicity in communication may also lead to annoyance and potential escalation in problem resolution from a mild to a more forceful approach (Friedman & Currall, 2003).

Internal instant messaging (IM) presents prospects for expedient and effective intercommunication but carries potential threats such as viruses and spyware, as well as the possibility of employees engaging in prolonged conversations with colleagues (Lipiäinen et al., 2014). Similar to email, IM cannot convey the speaker's nonverbal cues, such as facial expressions, body language, and tone, potentially resulting in misinterpretations. Moreover, a temporal issue exists concerning the synchronisation of actions and reactions. For example, when expressing agreement or disagreement with a conversation via IM, slight delays are observed compared to face-to-face communication, as noted by Wolk (2002).

Nevertheless, IM is a cost-effective and rapid communication method that enables synchronous interaction with multiple parties simultaneously (Quan-Haase, 2008). The primary advantage relates to the aspect of presence. According to Shiu and Lenhart (2004), IM can facilitate a less formal

communication style, providing increased opportunities to seek clarification through questioning and thus ensuring mutual understanding before proceeding with a conversation. The utilisation of IM as a communication channel may be more effective than email in fostering a more sociable environment (Shiu & Lenhart, 2004).

Although these novel instruments hold immense potential, their efficacy is rendered futile if the medium employed to convey the message fails to garner acceptance from the workforce (Osborne & Hammound, 2017). According to Belch and Belch (2012), the efficacy of communication relies on the mutual acquaintance of communication medium codes and conventions by the sender and receiver. Conventional modes of communication seem to remain the preferred means of internal communication among employees. Friedl and Verčič (2011) discovered that individuals belonging to Generation Y (those born after 1980) exhibit a proclivity towards conventional internal communication channels in their professional lives while simultaneously displaying a marked inclination towards social media platforms in their personal lives. Numerous academic studies (Bolton et al., 2013; White et al., 2009) have indicated that face-to-face communication is the preferred channel for interpersonal communication due to its richness.

Face-to-face communication allows for immediate feedback and the conveyance of information in a more personalised manner compared to other communication methods. Grunig (2013) noted that frequent in-person interactions facilitate relationship development and enhance communication among acquaintances. Employees prefer specific types of media depending on the nature of the information being conveyed. According to White et al. (2009), electronic mail is deemed advantageous for prompt dissemination of updates and notifications, while websites or intranets serve as repositories of information that can be accessed as necessary.

2.6.2 *Adoption and Use of Digital Communication Within the Organisation*

Studies on technology adoption and use are expanding, prompting inquiries into how workers feel about technological change and digital disruption. Attitudes

towards specific technologies are significantly influenced by how individuals feel about the broader technological transformations occurring in society and their impact on employment. Several fields, including production and automotive engineering (Gurtoo & Tripathy, 2000), the media (Jones et al, 2010), and libraries (Karimi & Walter, 2015), have studied workers' perspectives on disruption. The manufacturing and transportation sectors were among the first to adopt new technologies.

Despite considerable theoretical progress in understanding how people accept technology, not much has been done to combine this body of research with other employee-related factors that are likely to change the current understanding. Matt et al. (2015), and Berghaus and Back (2016) showed that the current digital transformation models primarily focus on the technological process and strategy while ignoring the incorporation of other elements. Scholars have identified how technology affects workers and their productivity as an important area of study (Venkatesh & Bala, 2008). However, framework development and testing have been lacking in this area until recently.

Kaasinen et al. (2019) proposed an employee-focused framework for Industry 4.0, drawing from studies of people's attitudes towards new technologies and measures of their satisfaction and enjoyment at work. The framework is based on prior research on employee satisfaction in the workplace.

The proposed framework posits antecedents that operate at the individual, organisational, and environmental levels, having direct implications for a worker's encounter with technology or procedure. These implications include user acceptance, user experience, usability, and safety, which significantly influence the well-being of employees in the workplace and the overall outcomes of the organisation (Kaasinen et al., 2019). With the ongoing digital transformation of organisations, employers must prioritise the well-being of their employees. However, the impact of individual factors, specifically workplace resilience and adaptability, on digital transformation outcomes for individuals and organisations has not been extensively researched.

The proliferation of sophisticated technology coincides with a rise in the scarcity of skilled labour in the job market. Retraining and enhancing the skills of workers is one of the most pressing issues confronting both governmental bodies and organisations. According to the World Economic Forum (2020), many companies may experience a growing disparity in skills in the foreseeable future. Employers are seeking candidates with a wide range of skills, including critical thinking, problem-solving abilities, self-management skills, flexibility, and resilience (McKinsey, 2021; World Economic Forum, 2020).

McKinsey stated that 89% of global companies are currently facing or anticipate encountering a skills gap. Besides the rising demand for specialised skills, employers now highly value soft skills (World Economic Forum, 2020). Therefore, researching individuals' willingness to acquire new skills and adapt to the impacts of digital transformation is crucial.

2.6.3 *The Impact of Group Dynamics and Organisational Factors on Digital Transformation*

Creating interdisciplinary frameworks that consider various factors across different levels, including individual employees, group dynamics, and organisational processes and outcomes, is highly significant (Chan, 2019). This research encompasses multiple disciplines and aligns with prevailing patterns in organisational behaviour (OB). Scholars such as Ployhart (2012) have contributed to studies that emphasise the importance of examining the interplay between individual, group, and organisational factors in technological transformation. Additional studies conducted by Seers et al. (1995), Burton-Jones and Gallivan (2007), Venkatesh et al. (2016), and other researchers highlight the imperative to investigate the comprehensive impacts of technology as a driver for digital transformation on both individuals and organisations.

Current models of OB examine and forecast human behaviour in professional settings, offering valuable insights into the diverse factors influencing individuals and organisations across various levels. Organisational Behaviour frameworks analyse the actions and attitudes of individuals and groups within organisations, focusing on three distinct levels. At the micro-level of analysis, the focus is on

individuals within organisations. According to Wagner and Hollenbeck (2020), the meso-level of analysis pertains to work groups, while the macro-level pertains to the behaviour of organisations.

Organisational Behaviour draws upon insights and theories from various behavioural disciplines, including psychology, which predominantly focuses on the individual or micro-level. Contributions from additional disciplines, such as social psychology, sociology, and anthropology, are valuable in understanding meso and macro concepts, including group and organisational processes and outcomes (Robbins & Judge, 2019). Domains such as attitudes and engagement, employee identification and commitment, motivation, organisational culture and climate, leadership, group and team interactions, and employee health and well-being are frequently studied within the field of OB (Ployhart, 2015). In the context of popular OB models, academics have recently emphasised the value of human capital.

Expertise, skills, and competencies constitute crucial components of human capital; however, Ployhart (2015) contends that human capital encompasses institutional factors as well, including provisions for employee education and development funding. In response to the escalating apprehension about skills gaps highlighted by Schwab (2017) in the Fourth Industrial Revolution (4IR) and the future of work, Robbins and Judge (2019) recommended the incorporation of existing Industry 4.0 frameworks, as suggested by Kaasinen et al. (2019) and Molino et al. (2020), into established models of Organisational Behaviour (OB).

2.6.4 *Organisational and Group Dynamics Affecting Digital Transformation*

Interdisciplinary frameworks that encompass various dimensions across multiple levels, including group dynamics, organisational-level procedures, and results, as well as employee factors and work-related outcomes, have been identified as imperative (Chan, 2019 & Venkatesh, 2006). The research focus, spanning multiple disciplines and levels, aligns with prevailing trends in OB (Ployhart, 2012). These trends emphasise the necessity of conducting in-depth examinations of the interconnections among individual, group, and organisational

factors in the context of technological transformation (Burton-Jones & Gallivan, 2007; Venkatesh et al., 2016).

In general, there is a need for a deeper understanding of the correlation between the role of technology as a catalyst for digital transformation and its impact on both individual employees and whole organisations. Existing OB models analyse and forecast behaviour in work environments, providing insights into multiple-level influences on both people and organisations. Three levels of human behaviour and organisational structure are examined by OB frameworks:

i. Individuals working within organisations.
ii. The behaviour of work groups (meso level).
iii. The overall behaviour of organisations (Wagner & Hollenbeck, 2020).

Organisational Behaviour looks at elements such as company culture, management styles, benefits, and policies to see how they affect employees' attitudes, engagement, identification, commitment, motivation, leadership, team dynamics, and overall well-being (Ployhart, 2015). Academics highlight the importance of human capital in modern OB models. Human capital includes individual skills and knowledge, but it is also about how an organisation provides resources and support to develop talent (Ployhart, 2015). To address concerns about not having enough skills in the Fourth Industrial Revolution (4IR) and future work, it is suggested to combine current OB models with Industry 4.0 frameworks (Kaasinen et al., 2019; Molino et al., 2020). This view is supported by Robbins and Judge (2019).

Devising and implementing new ICT tools are ways to enhance OE. As pointed out in Chapter 1, OE is essential to achieve OpEx. Therefore, the above discussion demonstrated the centrality of utilising digital communication to enhance OpEx within organisations. By employing digital communication tools and platforms, organisations can optimise operational procedures, enhance cooperative efforts, and augment overall efficiency. Several mechanisms illustrate the interconnectedness of digital communication with operational efficiency, as demonstrated in Table 1.

Table 1

Digital Communication and Interconnectedness with Operational Efficiency

Terminology	Explanation and Gaps
Real-time communication	The analysis reveals that real-time communication is facilitated by digital communication tools, enabling employees to engage in instantaneous and immediate communication, irrespective of their geographical proximity (Bhasin & Burcher, 2006). Although digital tools facilitate instantaneous communication, thereby optimising operational efficiency through reduced bottlenecks and enhanced workflow, organisations have not fully embraced their potential.
Digital communication	These platforms facilitate enhanced collaboration among employees by providing a centralised and easily accessible means for sharing information, documents, and updates (Bhasin & Burcher, 2006). This eliminates the need for laborious and ineffective approaches, such as the exchange of physical documents or face-to-face meetings.
Process automation	The integration of digital communication with automated systems and workflows streamlines repetitive tasks and reduces manual effort (Bhasin & Burcher, 2006). Digital communication tools enhance operational efficiency by automating repetitive tasks, enabling employees to allocate their time and efforts towards more strategic and value-enhancing endeavours.
Digital communication platforms	These platforms promote effective knowledge dissemination among staff members, guaranteeing the accessibility of pertinent information to aid decision-making and problem-solving endeavours (Bhasin & Burcher, 2006). Digital communication enhances efficiency in accessing and utilising organisational knowledge by eliminating the need for information search and reliance on outdated documents.
Remote and flexible work	The increasing prevalence of remote work and flexible work arrangements has heightened the importance of digital communication tools (McAdam & Evans, 2021). Flexibility not only contributes to improved work–life balance but also enhances overall operational efficiency by guaranteeing uninterrupted work.

In general, digital communication is associated with OE, enabling instantaneous communication, improved collaboration, automated processes, knowledge sharing, and remote work (McAdam & Evans, 2021). Through the effective utilisation of digital tools and resulting OE, organisations can optimise their OpEx.

2.7 Chapter Summary

This chapter focused on existing literature and how it informed the study at hand. Firstly, OpEx was defined and the importance of OpEx within the competitive and expanding organisational landscape was highlighted. Thereafter, the Genre Theory of Organisational Communication was used to provide a means to draw comparisons and enable an understanding of the conceptual framework to achieve the research objectives. Several theories related to media use in organisational communication were mentioned. These theories showed the intricate relationship between media and precise communication.

Status Quo Bias theory was discussed to illustrate how people tend to favour existing ways of doing things, technologies, tools, and methods over what is new and untested for them. The SQB theory was used to indicate that people do not always act in a way that will logically lead to better outcomes when these ways are new. According to SQB theory, individuals may be reluctant to accept ICT and the communication tools and methods linked to ICT because these are new, unexplored, uncomfortable, and may include a learning curve even if adopting these tools makes sense from a purely logical perspective.

The sections that follow, explore the importance of digital communication within an organisation and indicate the implications of challenges when communication is not used correctly. It is noted that an organisation will have to adapt to changes in communication patterns. These changes may be structural, affect the speed of operation, affect efficiency, increase global reach, and assist in cutting operational costs.

Various digital communication tools available to organisations are discussed, notably the development and implementation of an intranet. Email remains the most-used digital communication tool while blogging, and IM are mentioned.

The section on the adoption of new communication technology shows that there is a paucity of scholarly information relating to the intersection between the adoption of new communication technologies and organisational behaviour, culture and so forth.

This chapter created the backdrop against which this study will be done. The next chapter will address the methodological aspects of the study.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Introduction

This chapter provides an overview of the methodology, including details about the study location, the study design, methods, sampling techniques, data collection procedures, data analysis tools and techniques, and ethical considerations.

3.2 Factors Influencing the Methodology Selected

The focus of this study is on people's lived experiences in using digital communication tools at ARM. The approach thus had to allow interaction with people who work at ARM and cater to allowing participants to speak freely about their experiences. In addition, the study is underpinned by the Status Quo Bias theory which, likewise speaks to analysing people's experiences and beliefs about a subject matter. These factors were the guiding forces for the selection of the research approach, methodology, and design.

3.3 Research Approach

3.3.1 *Status Quo Bias Theory as Theoretical Background*

The Status Quo Bias theory was selected as the most appropriate theory to comprehend and tackle the obstacles to implementing efficient internal communication techniques to attain OpEx at ARM. The theory states that both individuals and organisations possess a natural urge to maintain their existing status or exhibit resistance towards any form of change. This inclination can substantially influence endeavours to enhance internal communication and achieve OpEx.

Resistance to change may occur among employees and management when it comes to altering existing communication methods, primarily because they are comfortable with the status quo. This resistance can impede the implementation

of new digital communication tools and strategies which are important for enhancing internal communication and achieving OpEx.

Behavioural resistance, as emphasised by the Status Quo Bias theory, refers to the tendency of organisations to continue with current methods even when more efficient solutions are available. The resistance to change can hinder the adoption of new communication technologies that improve operational efficiency.

3.3.2 *The Relation Between Status Quo Bias Theory and the Data Collection Process*

A specific subject matter can be studied by utilizing quantitative, qualitative, or mixed-methods research methodologies. According to Creswell and Poth (2018), quantitative research pertains to the methodical and empirical exploration of observable occurrences by applying statistical, mathematical, or computational approaches. In contrast, qualitative research is essentially an exploratory approach aiming to comprehend individuals or groups by scrutinizing their experiences, beliefs, and motivations (Denzin & Lincoln, 2018).

While both research methodologies are important for gathering primary data in empirical research, this study has employed a qualitative approach to gather adequate data to address the research inquiries. Qualitative research employs non-numeric methods for data collection, such as interviews, observations, narratives, and focus groups (Denzin & Lincoln, 2018). In qualitative research, the sample size is usually smaller compared to quantitative research because qualitative studies do not depend on numerical or statistical data. The objective of qualitative research is to acquire a comprehensive understanding of the participants' experiences, viewpoints, and situations (Corbin & Strauss, 2008).

The four components of Status Quo Bias theory as outlined by Samuel & Zeckhauser, 1989) directly influences the data collection process in this study. Since the theory highlights resistance to change, it suggests that participants might exhibit a preference for current communication methods and show reluctance towards new digital tools. This resistance can manifest in the data collection process, where participants may provide insights that favor existing

methods over proposed changes. The qualitative research design is deemed most appropriate for this thesis since it aims to examine the use of digital communication within ARM. Thus, this study can benefit from the inclusion of real-life experiences, perspectives, and circumstances to effectively address the research questions at hand.

3.4 Research Design

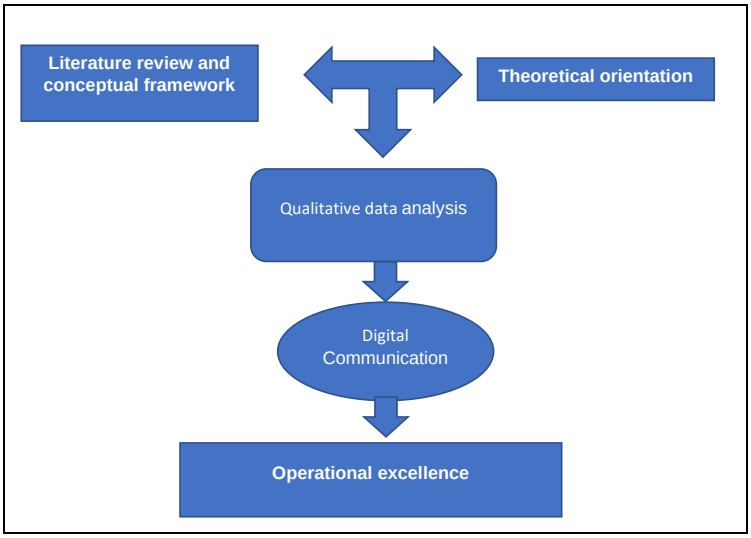
An effectively coordinated research strategy guides the achievement of the thesis objectives and addresses the research inquiries. The selection of a research strategy is contingent upon the nature of the research questions, as different techniques are appropriate for different types of inquiries. A variety of methodologies are involved in research, including case studies, experiments, action research, surveys, ethnography, archival research, and grounded theory (Saunders et al., 2015).

The research design employed in this research is a case study, which is a qualitative design where the researcher delves deeply into a programme, event, activity, process, or one or more individuals. The case(s) is time and activity-bound, and researchers gather information over a period using a range of data-gathering techniques (Hancock & Algozzine, 2017).

Given the exploratory nature of this study, a suitable methodology for elucidating the 'how,' 'what,' and 'why' aspects of the subject under investigation is a case study (Hollweck, 2016). Utilising case studies, especially through interviews, is advised for a comprehensive exploration of a specific context (Saunders et al., 2015). This study specifically focused on investigating digital internal communication from the employees' perspective, making a case study an apt method for gaining a deep understanding of the organisation's circumstances (Saunders et al., 2015). Figure 2 illustrates the entire design and logically links it to the data collection process.

Figure 2

The Research Framework



Source: Own, 2023

The research framework allowed the researcher to mentally place each aspect of the study and understand the interactions between the various elements of the study. In so doing, it helped to guide the process of deciding on the design, paradigm, methodology, and tools to use. Because the entire process was laid out logically, it was clear to see the type of data needed and this, in turn, eased the data collection process.

This study follows a qualitative case study methodology to investigate the phenomenon of internal digital communication within ARM. The research employs a deductive methodology to reach an understanding of the intricate nature of internal digital communication practices (Mbhele & de Beer, 2021).

3.4.1 *The Deductive Approach*

This approach involves researchers commencing their investigation with a pre-established theory or conceptual framework, serving as a guiding principle throughout the research (Corbin & Strauss, 2008). The investigation begins by formulating a predetermined set of research inquiries or hypotheses derived from the extant literature or theoretical frameworks. The research questions or hypotheses function as a foundation for gathering and examining data.

In a case study on internal digital communication, employing a deductive approach entails deliberately selecting a pertinent theoretical framework or model to illuminate the practices of digital communication within organisational contexts. Subsequently, the researcher formulated precise research inquiries or hypotheses derived from the theoretical framework. The primary objective of the data collection process is to acquire empirical evidence that can either validate or challenge the proposed hypotheses or offer valuable insights into the research questions. The analysis involves interpreting the data within the context of the pre-established theoretical framework.

In the context of this study – a deductive qualitative case study on internal digital communication – data were gathered by the researcher through interviews. Subsequently, the data were subjected to systematic analysis to discern patterns, themes, and concepts in internal digital communication practices as suggested by Braun and Clarke (2006).

In contrast, the inductive approach involves the initial gathering and examination of data, enabling the identification of patterns, themes, and insights that arise from the data itself. In the realm of research, scholars typically refrain from commencing their investigations with preconceived research inquiries or hypotheses (Saunders et al., 2015).

The selection of a deductive approach is contingent upon the research objectives, the pre-existing theoretical framework, and the level of knowledge advancement within the discipline. The inductive approach is more suitable in situations where researchers are exploring areas that have not been extensively studied or when the existing theories are inadequate to explain the phenomenon being investigated. By employing deductive methodology, researchers can acquire valuable knowledge regarding the factors that influence communication patterns, the efficacy of digital tools, and the implications for organisational processes and outcomes.

3.4.2 *Research Instruments*

A research instrument is a tool a study uses to measure, examine, analyse, and collect data relating to the research interests (Chali et al.,2022). Data collection for this study utilised semi-structured interviews for participant engagement. Interviews not only facilitated the acquisition of information from participants but also the exploration of related issues, additional information, and novel insights (Jahja et al., 2021). The attached interview guide comprises questions that were strategically crafted to comprehensively address each research inquiry.

Before conducting the interviews, the researcher conducted a *pilot study* to evaluate and improve the interview methods (Castillo-Montoya, 2016). It may assist in determining if the interview design has faults or limits that require alterations to the primary study. For this study, a research guide was shared with a selected group of experts in the field of communication, comprising individuals with knowledge and experience in various aspects of communication, including digital communication in organisational settings. Their invaluable expertise was sought to assess and validate the interview questions' effectiveness and relevance.

Involving this group of individuals ensured that the interview questions were well-crafted and aligned with the current trends and best practices in the field of communication. Their critical evaluation helped identify potential gaps, ambiguities, or redundancies in the questions, thereby refining the questionnaire to guarantee its effectiveness in gathering accurate and meaningful data.

3.5 Research Paradigm

According to Rehman and Alharthi (2016), a research paradigm comprises several components, including ontology, epistemology, methodology, and techniques. These components are linked by interconnections and display interdependent dependencies. A paradigm is a collection of basic assumptions that support a particular frame of reference and govern theoretical thinking (Braun & Clarke, 2006). The following sections explain the components that constitute the research paradigm adhered to by this study.

This study adopts constructivism, a theoretical framework that posits that knowledge is actively constructed by individuals through their experiences (Creswell, 2015). Saunders and Townsend (2016) asserted that knowledge acquisition is a dynamic process whereby people actively create their understanding via personal experiences and interactions. This study aims to gain insight into how people view and interpret the use of digital communication and examine the cognitive biases that impact their decision-making processes. This includes investigating the beliefs, attitudes, and subjective experiences of participants about their present communication practices. The researcher acknowledges that individuals shape their understanding of digital communication adoption based on their subjective experiences and social interactions.

Furthermore, the epistemological assumptions behind this study revolve around the foundational beliefs and principles concerning the nature of knowledge and how it is acquired (Saunders and Townsend, 2016). Employing an interpretative perspective involves extracting understanding from a subjective analysis rather than a broader analysis to ascribe significance to social conduct (Creswell, 2019).

The assumption is based on Creswell's (2019) views that knowledge construction is influenced by social factors, and individual cognitive processes and biases must be considered to fully grasp their attitudes toward adopting new communication technologies. The application of this study includes directing efforts toward investigating how people understand and use digital communication, as well as examining the cognitive biases that impact their decision-making processes. This includes considering the participants' beliefs, attitudes, and subjective experiences regarding their present communication practices.

3.6 Data Collection Methods

Primary data refers to the first-hand information gathered for a specific occasion. While utilising a qualitative research approach, a recommended means of gathering primary data is through interviews. According to Saunders et al. (2015),

interviews may be categorised as structured, semi-structured, or unstructured. This study employs semi-structured interviews to gather data from three layers of employees of the organisations (executive, line managers, and operations). Semi-structured interviews involve open-ended questions, with follow-ups and probing questions to elicit further responses on the study's focus (Adeoye-Olatunde & Olenik, 2021). Semi-structured interviews follow a prearranged thematic outline for the questions (George, 2023).

Semi-structured interviews, a form of qualitative research, are utilised to gain a comprehensive understanding of the subject under investigation. They offer a viable approach for gathering qualitative data, prioritising the comprehension of the 'what', 'how', and 'why' inquiries of the investigation. Semi-structured interviews are designed by formulating a predetermined set of themes and essential inquiries to be addressed throughout the interview process. According to Saunders et al. (2015), semi-structured interviews facilitate an open dialogue, implying that the conversations may take different directions and additional questions may emerge.

The central focus of the investigation pertains to various aspects of the theoretical framework, including digital communication within a company, e-mail, intranet, social media, upper management, middle management, and operational staff. Additionally, fundamental inquiries regarding the flow of communication, vision, and goals, and feedback are conducted to understand the functioning of digital internal communications within the organisational hierarchy.

3.6.1 *Data Collection During the Interview Process*

Maintaining flexibility and openness to probing further into specific topics based on the participant's responses is important while adhering to the interview guide. Probing questions can disambiguate equivocal responses, stimulating respondents to expound upon their answers and investigate diverse viewpoints. The level of flexibility afforded in this approach facilitates a more profound comprehension of the perspectives and encounters of the participants.

Before the actual interviews, participants were identified and contacted to gauge their interest in joining the study. The interested individuals were contacted in person and via email. Once they agreed to participate, meetings were scheduled in their diaries.

At the scheduled meeting, participants received a consent letter outlining the study's background and objectives, the company's approval to conduct the study, and the participant consent form. This ensured that participants had sufficient information about the research and could decline if they were not comfortable participating. Notably, specific research questions were not shared with the participants to maintain a conversational approach rather than a question-and-answer format.

The interviews were all guided by the researcher. An interview guide, following the recommendations of Jacob and Furgerson (2012), was used to structure the interviews. This guide included a script for opening and closing the interviews, helping to clarify the research objective and organise the discussions.

Before diving into the formal interview questions, participants were informed about the confidentiality of the discussions. They were also given the chance to ask questions and grant permission to record the session using a mobile device. Participants were reminded that the discussions were based on their personal experiences and opinions within the context of ARM. The conversations commenced with introductions, which proved useful in collecting demographic information.

Following the introductions, the interview guide progressed to questions directly tied to the research inquiries. These questions were open-ended, giving participants the freedom to share additional information beyond the initial request. While the general sequence of questions was followed, adjustments were made based on the participants' answers, enabling deeper understanding and exploration. In instances where participants pre-emptively answered certain questions, those questions were either skipped or explored further to encourage more detailed responses.

Throughout the conversation, participants were guided by follow-up probing questions and inquiries aimed at seeking clarity. This approach encouraged meaningful dialogue and a comprehensive exploration of participants' perspectives. A total of 15 individuals were interviewed, comprising nine males and six females. The longest interview was 27 minutes while others ranged from 20 to 25 minutes. Taking detailed notes and recording the conversation allowed the researcher to capture important information, such as key points, participant quotes, and non-verbal cues. If the participant granted permission, the interviewS were recorded for transcription and analysis. Note-taking or recording is a crucial step in ensuring the precise representation of participants' responses, which can be further analysed at a later stage.

3.6.2 *Data Analysis*

Data analysis involves exploring the data to glean useful information for informed decision-making. According to Rehman and Alharthi (2016), qualitative research analysis is the most arduous aspect of a study. Qualitative research typically incorporates authentic life encounters, enabling the gathered data to include narratives, which are personal experiences and stories that hold significance to the researcher. Saunders et al. (2015) contended that researchers have a responsibility to uphold the integrity of their participants.

The use of narratives gathered during interviews enables the analysis to be grounded and facilitates the development of a cohesive narrative, as posited by Denzin and Lincoln (2018). Lester et al. (2020) stated that research analysis is an ongoing process during primary data acquisition. Commencing analysis at an early stage in the process enables one to ascertain when the data gathered is sufficient for the study (Braun & Clarke, 2006).

The data transcription process involved accurately transcribing recorded interviews without alterations, additions, or expansion and organisation of the notes into coherent and comprehensible themes or formats. Transcription is essential for converting the data into a textual format for efficient analysis. The transcribed data is subjected to a qualitative analysis technique of thematic

analysis. To gain insights and interpret the findings, it is necessary to identify recurring themes, patterns, or codes within the data.

The data was effectively managed and organised using NVivo 14, a computer software for qualitative data analysis that aids in discovering rich insight from the collected data. NVivo 14 facilitates the asking of difficult questions on the collected data, identifying arising themes as well as coding and drawing conclusions (Allsop et al., 2022).

The initial stage, namely preparation, underscores the significance of accurately transcribing the gathered data (Saunders et al., 2015). The interview is moderated by a single individual, while another provides support by posing supplementary inquiries. The third person acts as a secretary, taking notes and recording the interview in audio format. According to Saunders et al. (2015), the process of transcribing audio recordings encompasses not only verbatim transcription but also paralinguistic features that convey how the words are spoken. Since the interviews were captured in audio format, the written notes served as a supplementary resource to the recorded content.

Condensing a large volume of data into a more concise form is part of this process. According to Patton (2014), early categorisation of collected data can facilitate the analysis. The researcher provided a comprehensive overview of the salient aspects of the transcribed interviews to enhance comprehension of the gathered data. The transcribed material can be classified based on the theoretical framework of the thesis and the interview outcomes. The categories include vision and goals, e-mail, intranet, social media, communication flow, and the comparison between digital and face-to-face communication.

Yin (2014) emphasised the significance of accurately analysing and transcribing the gathered data to ensure that the study’s conclusion is reflective and meaningful. Saunders et al. (2015) proposed a sequential approach for the examination of qualitative data involving four distinct stages: preparation, summarisation, categorisation, and structuring. These steps were facilitated in attaining a comprehensive understanding of digital internal communication within

the selected organisations and identifying the most significant discoveries. Table 2 summarises the data analysis process.

Table 2

Summary of the Approach

Steps	Approaches
Familiarisation	The interview data was read through multiple times to become familiar with the content and gain a sense of the overall context.
Data importing	The interview transcripts were imported into NVivo. This can be done in various formats, such as text files and Word documents.
Coding	Segments of the data that are relevant to the research question were identified and labelled. Codes were created based on keywords, phrases, or ideas emerging from the data.
Building themes	Related codes were grouped to form potential themes representing the main ideas or patterns apparent in the data. NVivo's 'sets' or 'nodes' feature was used to organise these themes.
Reviewing themes	The themes were reviewed to ensure they accurately represent the data before making any necessary adjustments. This involved splitting or merging themes or re-coding data segments
Defining and naming themes	Each theme was clearly defined and assigned a descriptive name encapsulating its meaning.

The study adopted a thematic approach to present the data. Braun and Clarke (2013) indicated that thematic analysis has only relatively recently been recognised as a qualitative research method. There are now several clear and comprehensive accounts of how to carry out high-quality thematic analysis.

Maguire and Delahunt (2017) defined thematic analysis as the interpretation involving organising data into codes, categories, and themes. Braun and Clarke (2006) advocated for thematic analysis, emphasising its role in arranging data systematically into themes. The process of analysing and interpreting data follows a structure that starts with preparing and coding the data. This is followed by establishing categories and themes for orderly presentation. The last stage involves making sense of the gathered data through processes such as crystallisation and validation to reach conclusions.

3.7 Population and Sample

3.7.1 *Population*

Daily control and visual management (Eaidgah et al., 2016), workplace organisation, and continuous improvement are the focus areas of this study since these are directly related to OpEx. Turale (2020) defined the target population as the group of individuals, objects, or items from which a study draws samples for measuring the studied phenomena. The study was conducted at three levels within ARM, senior management, middle management, and operations, comprising 15 staff members, particularly those who use digital platforms for communication.

3.7.2 *Sample and Sampling Method*

The selection of the sample frame and size is a critical aspect of the research design, substantially impacting the generalisability of the study and the reliability of the results. According to Creswell and Poth (2018), a sample frame is a comprehensive roster of all units present in the population, each assigned a distinct identifier. On the other hand, the sample size pertains to the number of units randomly chosen from the population for the research study. Studies rely on the study sample (smaller group of interest) since it is impossible to involve the entire target population when collecting data (Andrade, 2021).

Saunders et al. (2015) developed a matrix guiding researchers in determining the appropriate sampling method to employ. The non-probability sampling technique was employed in this study, as it is suitable for an in-depth investigation with a relatively limited sample size (Saunders et al., 2015). Non-probability sampling has four distinct categories of sampling approaches: quota sampling, snowball sampling, purposive sampling, and convenience sampling. This study utilised the purposive sampling method due to the limited sample size, enabling the sample selected to exercise discretion.

The researcher conducted interviews with 15 employees, five from each of the three organisational levels (senior, line/middle, and operations). The choice was

based on the availability, assumed use, and knowledge of digital communication. Using a similar sample, Patrick and Kumar (2012) demonstrated a keen awareness of the potential criticism that may be directed toward the sampling methodology employed, which may be perceived as lacking in uniformity in the number of employees interviewed across different organisations. Notwithstanding these arguments, the researcher deemed the selected sample valuable to furnish insights for this investigation.

3.8 Limitations and Challenges of the Study

This study comprises a single case study involving the employees of ARM, limiting findings on digital platforms in internal communication to exclude results from other mining companies in South Africa. Due to the diversity and varying levels of literacy among the company's employees, this study was further limited to workers of ARM employed in South Africa. The study was limited to indicating the use of digital platforms in internal communication and their impact on OpEx.

The study findings are based on the company environment and are only generalisable within the national and organisational context. Further, the size of the sample was limited to 15 participants. The participants exhibited a degree of geographical heterogeneity due to the dispersed nature of the selected organisation's workforce across ARM. Time constraints limited the number of sites where interviews were conducted, and the study acknowledges that the limited sample size at each level may not adequately represent the entire organisation. This factor was duly considered during the study.

The lack of a deep understanding of OpEx affected the quality of some of the responses. Another limitation pertains to the variability in organisational size and industry involvement across the sample. The study outcomes could potentially be constrained as workers in smaller units may have alternative avenues for internal communication with top-level management compared to their counterparts in larger units. The primary data revealed significant variations in the utilisation of digital communication tools within a single organisation, which can be attributed to the differences mentioned before. Additionally, various digital communication

tools are utilised across ARM, with varying degrees of implementation. Thus, the analysis presented certain challenges in terms of its interpretability, as not all organisations utilise social media, thereby limiting the scope of the study.

The absence of identifiable information and the assurance of privacy did not pose a hindrance in the execution of this research, as it facilitates the authors' acquisition of a comprehensive understanding regarding the internal communication of the organisations.

The study's credibility and comprehensibility were enhanced by incorporating additional demographic information, such as age, gender, and a more specific job title, despite the potential limitations associated with such data. Given the current trend towards digital internal communication, examining the topic through the lens of gender proved to be a compelling perspective for scholarly investigation.

3.9 Quality Assurance

3.9.1 *Internal Validity*

The four types of validity are internal validity, construct validity, content validity, and criterion-related validity (Middleton, 2023). Maintaining internal validity in qualitative research necessitates meticulous contemplation of diverse factors that may impact the dependability and authenticity of the outcomes (Morse, 2015). Although qualitative research typically centres on comprehending subjective experiences and interpretations, researchers can take measures to enhance internal validity. The implementation of these tactics was instrumental in guaranteeing internal validity in qualitative research.

- The participant selection process for this study involved utilising purposeful and diverse sampling techniques to ensure that individuals with pertinent knowledge and experiences related to the research questions were included. Clear guidelines for participant selection were established to provide a rationale for their pertinence to the research goals.

- Employing meticulous and precisely defined data collection methodologies consistent with the research objectives is imperative. Various methods can be employed to collect data in qualitative research, such as semi-structured interviews, focus groups, observations, or document analysis. It is imperative to thoroughly document the procedures, protocols, and contextual details of data collection to promote transparency and reproducibility.
- Triangulation, involving various data sources and techniques, such as interviews, observations, and documents, was employed to corroborate and validate the research findings. To enhance the internal validity of the research, the researcher compared, and cross-validated data obtained from various sources.
- The objective was to attain data saturation, a point where fresh data acquisition ceases to yield further insights or perspectives about the research queries, suggesting that enough data have been gathered to substantiate the validity and inclusiveness of the results.

3.9.2 *Reliability*

Reliability in qualitative research necessitates establishing consistency, dependability, and trustworthiness in the data collection and analysis procedures (Morse, 2015). Although qualitative research is frequently centred on subjective interpretations, certain techniques can be utilised to augment reliability. Several essential strategies were employed to ensure reliability in this study.

The research design was clear, defining specific objectives, and delineating the scope of the investigation. A detailed research strategy outlined the methodology, including data gathering techniques, sampling methods, and data analysis procedures. The documentation process was thorough, covering field notes, transcripts, coding decisions, and interpretations, aiming for transparency to ensure result reproducibility and reliability checks. To ensure accuracy in data analysis, especially with multiple coders, the literature recommended establishing inter-coder reliability. This involves independent analysis by coders on a subset

of data, followed by a comparative analysis of coding decisions using metrics like Cohen's kappa or percent agreement.

Reflexive practices were integrated, maintaining an audit trail of decision-making throughout the research process. Documentation of reflections, interpretations, and decision-making rationales enhanced transparency for future reliability assessments.

3.8.3.1 Evaluation process of the conceptual framework

To ensure that the findings of the study are reliable, the study included an evaluation through a focus group expert to openly review the proposed model as a reliability tool. An open peer review is described as a procedure in which an author's academic work, research, or ideas undergo evaluation by experts in the same field (Williams & Beam, 2018). The evaluation process entailed debriefing, and embracing external reviews involving discussions with communication experts, colleagues and researchers to obtain feedback on the research process, findings, and interpretations and the proposed model.

This external review aimed to identify biases, provide alternative perspectives, and strengthen the study's dependability. Peer evaluation serves various social functions, operating as a type of symbolic interaction in which the collective perspectives of the academic community shape the validation and presentation of knowledge claims (Hirschauer, 2010). The assessment of the focus group entailed a collaborative exchange, allowing the researcher to engage with peers in their respective fields.

The evaluation process was initiated by the researcher identifying expert reviewers with suitable qualifications who were also available, considering the conflicting demands of professional life. Five (5) experts in the field of communication and information technology were selected to assess the results and the proposed model to provide feedback on the appropriateness of the proposed digital communication model. The researcher received feedback and considered feedback from the reviewer to make an assessment and decision thereof.

To enhance the reliability and validity of the collected data, the semi-structured interview guide was strictly followed, with deviations only for further probing on responses. An audit trail of interview recordings and transcriptions was maintained and securely stored on a computer accessible solely to the researcher.

3.9.3 *Trustworthiness*

The four key criteria for measuring trustworthiness in qualitative studies are credibility, confirmability, transferability, and dependability (Stahl & King, 2020). This study used persistent observations and prolonged participant engagement to achieve credibility (the truthful and accurate depiction of the participants' lived experiences), learn the embedment and context of digital platforms in internal communications, and minimise misrepresentations. The aim of establishing credibility in this study was to measure the truth value, correctness, and accuracy of the findings.

To achieve dependability, this study was reviewed by a supervisor, with authenticated transcribed data to identify descriptors and themes. Dependability involves measuring the reliability and consistency of the study results by availing adequate related information and tracking the data interpretation, collection, and analysis methods so that the study generates consistent outcomes and is theoretically replicable by other researchers (Stahl & King, 2020).

Confirmability was achieved by maintaining reflexive notes or journals in the study process as well as daily documentation. An audit trail assisted in examining the progressions after data collection, analysis, and interpretation. An audit trail comprises documentation, note-taking during interviews, and running the accounts of the interview process in the everyday field journal (Carcary, 2020).

3.10 Ethical Considerations

This study explores three levels of organisation within the realm of digital internal communication that have not been previously explored. This study contributes significantly to the existing literature by clarifying the three distinct levels of an

organisation – top managers, middle/line managers, and operations – and their respective modes of interaction facilitated by the digital communication tools under examination. Preserving participant confidentiality and anonymity is crucial while transcribing data. This study was centred on the intranet, e-mail, and social media, and evaluated these digital communication tools in comparison to conventional face-to-face communication. The following ethical aspects were considered.

3.10.1 *Approval to Conduct the Research*

The researcher adhered to ethical considerations throughout the study, attending an ethics workshop arranged by the university to gain a thorough understanding of the ethics component of the study. The necessary authorisation was obtained from relevant entities: Wits University Research Ethics Committee, ARM Limited, and the employees involved as participants. This process ensured that the study was carried out in compliance with all relevant regulations and protocols, preserving trust among participants and the institution.

3.10.2 *Informed Consent*

Obtaining informed consent is paramount to guaranteeing that study participants possess a comprehensive understanding of the study's objectives, the potential advantages and drawbacks linked to their involvement, and their prerogative to terminate their participation at any point. Before signing the consent form, the study participants received information about the study and were allowed to seek clarification and address any concerns. The informed consent letter outlined the commitments. All participants signed the letter of their own accord.

3.10.3 *Voluntary Participation*

Participants were granted the privilege of voluntary participation, free from coercion or pressure to partake in the study. They were duly apprised of their right to withdraw from the research at any point without facing any adverse

consequences. The participants provided their informed consent by signing a document confirming their willingness to participate in the study voluntarily.

3.10.4 *Confidentiality and Anonymity*

Preserving confidentiality and anonymity was prioritised to safeguard the privacy of the study participants. The confidentiality of the participant's information was upheld, and the Protection of Personal Information Act (POPIA) was adhered to. The information gathered has been securely archived in password-protected electronic files that only the research lead has authorised access to. The confidentiality of the participants was guaranteed, and no personal information, such as names, addresses, or identity numbers, was requested.

3.10.5 *Management of Data*

Proper data management is crucial for ensuring the security and accuracy of the information gathered. The study complies with all data protection regulations and guarantees that the data gathered will be used solely for the study's objectives. The collected data have been securely stored, and the researcher has taken measures to prevent data breaches throughout the study.

3.11 CONCLUSION

In this chapter, it was explained that the study was exploratory and that was why a qualitative, case study approach was deemed the most appropriate. The researcher expounded on the decision to adopt a deductive approach and use semi-structured surveys administered to 15 ARM employees from various levels within the organisation.

The chapter also expounds on the research paradigm and touches on factors such as the fact that this study is constructivist and allows for the active participation of participants. The researcher describes the epistemological assumptions that underpin the study and states that an interpretive perspective was adopted to allow for a subjective analysis rather than a broad analysis of the subject matter.

Data were collected using semi-structured interviews with the researcher guiding the interviews. The interviews were recorded (if the participant agreed) and transcribed. Field notes were also taken and used in the analysis process.

The data analysis process was discussed. Interviews were transcribed and NVivo 14 software was used to analysis the data by coding, creating nodes, and drawing conclusions. Table 2 shows the 6-step process that was used to analyse the data.

The target population was noted to be ARM employees from three levels within the company. A non-probability sampling technique was employed. The concept of saturation was explained, and it was stated that saturation was achieved by participant 15.

The study was noted to be limited by several factors, notably the small sample size and only one company was used. The credibility of the study was enhanced by using demographic information.

The concept of quality assurance was discussed, and the various items mentioned included internal validity and reliability. The researcher explained that the study was subjected to an open peer review, where experts in the field perused and commented on the study. This added robustness and enhanced the quality of the work.

All relevant ethical aspects were considered, and the necessary authorisations were obtained. Participants all signed an informed consent form and also signed a consent to be recorded. The ways that confidentiality and anonymity were ensured were explained, as was the data management.

In the next chapter, the data will be presented. The data will be explained in Chapter 5, while recommendations will be made in Chapter 6.

CHAPTER 4. DATA PRESENTATION

4.1 Introduction

The focus in Chapter 4 is on the presentation of the data gathered through the interviews with the 15 participants who took part in this study. The Chapter presents the data and showcases the extracted prevalent and relevant themes derived. The findings obtained from ARM Staff interview responses provide valuable insights into the use, significance and influence of internal communication. The reactions additionally address the difficulties and obstacles encountered in digital communication.

4.2 Demographic Profile

Section A of the interview guide was aimed at establishing the demographic profiles of the study participants. It was of paramount importance to develop the demographic composition of participants. Demographic information serves as independent variables that are not subject to manipulation, as they consist of factual details provided by the participants. According to Lee and Schuele (2010), the term 'demographic' comes from the Greek words for people ('demos') and picture ('graphy'). It involves specific characteristics of a population, including age, race, gender, ethnicity, religion, income, education, home ownership, sexual orientation, marital status, family size, health, and disability status.

Critical to this study were age, gender, years of working experience at ARM and level of education of participants / grade. These independent variables need to be statistically and qualitatively examined to assess if they have meaning on the effectiveness and efficiency of the study to meet its intended objectives.

4.2.1 *Age*

Establishing the age was crucial for this study. Age is a critical aspect to consider in research as it impacts the reactions and responses of participants. Table 3 shows the age aspect of the demographic profile in detail.

Table 3

Age

Age	30-35	35-40	40 - 45	Over 50 years
	1	2	6	6

The largest age group in this dataset were individuals aged within the 40-45 age group which accounted for six individuals. The 50 years+ range also accounted for six individuals. This suggests that many individuals are middle-aged or older. According to Pelders and Nelson (2019), the average age of mine employees is 38 years which is not far from the average age of 42 years in this study.

4.2.2 *Gender*

It was expected that there would be more male participants in a study that focuses on the mining sector. Out of the 15 participants of the study, nine were males and six were females. No individuals in this dataset identify as non-binary, and none prefer not to disclose their gender.

Table 4

Gender

Gender	Male	Female	Non-Binary	Prefer Not to Say
	9	6	0	0

The findings show that the mining industry is largely male-dominated. This concurs with the views that the South African, and the SADC mining industry remains a male-dominated industry, and compared with other industries, the integration and participation of women has been slow (Ansake et al., 2021). According to the Minerals Council of South Africa, there has been a significant increase in the number of women in the mining sector over the years. The count has risen from around 11,400 in 2002 to 56,691 in 2019. Women currently make up 12% of the total mining labour force in South Africa, totalling 454,861 people.

4.2.3 *Education*

The mining sector in South Africa is labour intensive, especially at the entry level where most employees are males who are physically strong enough to undertake the required dangerous work. This is supported by data provided by the Mining Qualifications Authority (MQA) which notes that many workers have a GET/FET education with only 14% of employees in the mining sector equipped with a post-matric qualification (Ghebrihiwet, 2019).

Most individuals in this dataset have a PG/master's degree, with 11 persons, while four individuals have a degree. No one in this dataset holds a Doctorate.

Table 5

Level of Education

Education	Degree	PG/Master	Doctorate	Post-Doctorate
	4	11	0	0

4.2.4 *Years of Working Experience*

The value of working experience cannot be overstated, as it provides employees with the practical skills, knowledge, and understanding necessary to effectively undertake their tasks and roles (Podolsky et al., 2019). The more time one spends in an organisation the more the person will have the chance to improve the skills and knowledge of undertaking the assigned roles more effectively.

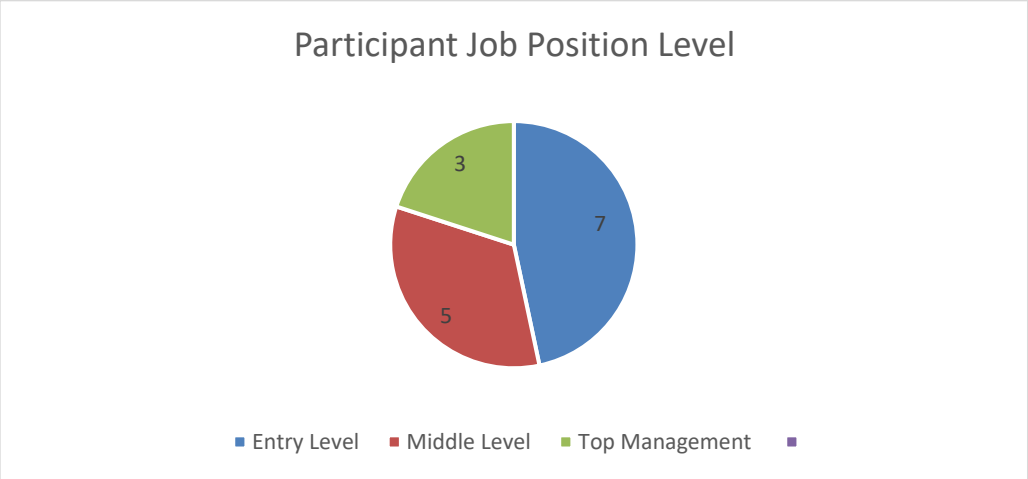
The study is nearly balanced in terms of the distribution of the participants across the four ranges. There are three individuals with 1-5 years of experience, four with 5-10 years, four with 10-15 years, and four with over 15 years of experience in their current position. The table below provides the breakdown.

4.2.5 *Job Position level*

The study also sought to find the level of the job positions of the participants. One's level of the position has a bearing on one's viewpoint of organisational processes and operations. The table below provides a breakdown of the 15 participants.

Figure 3

Job Level Participation



The majority of the participants were employees at the entry-level. This is important and appropriate for the study because these are the people who receive orders from the top and sent feedback to the higher echelons. It is also imperative to note that the entry-level accounts for the majority in any organisation because they are the people on the ground who do the groundwork and it is sufficient for any organisation to have that group as the majority in a study.

Table 6

Years of Employment

Duration of Employment (Years)	1 - 5	5 -10	10 -15	Over 15 Years
	3	4	4	4

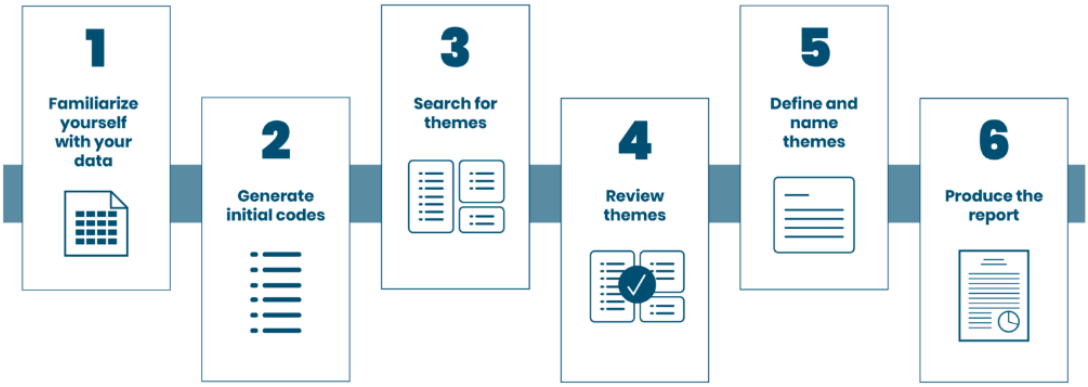
Note: The trend correlates well with the age demographic aspect

4.3 Data Analysis Procedure and Process

The process of conducting a thematic analysis on interview data using NVivo entailed using an organised methodology to find and examine the reoccurring themes or patterns present in the data. In accordance with Braun and Clarke (2006, p. 120-123), thematic analysis is a methodology that "identifies, analyses, and reports" on the patterns or themes present in the data. To initiate the data import process in this study, the researcher commenced by entering the interview data into the NVivo software platform to achieve the set goal. The process comprised six phases outlined below.

Figure 4

The Six Phases of Thematic Analysis



i. Data Familiarisation: Acquaint oneself with the dataset through the process of engaging with the interviews either by reading or listening to them. This initial stage facilitates the acquisition of understanding regarding the subject matter and its circumstances.

ii. Generate Initial Codes: The primary procedure entails coding, which refers to the decomposition of material into smaller, coherent chunks. It is possible to generate codes that symbolise subjects, notions, or principles.

iii. Search for Themes: The process of creating nodes in NVivo involves the creation of representations for codes. In this framework, individual codes or concepts are represented as nodes, which can be arranged hierarchically to effectively capture overarching themes and subthemes.

iv. Review Themes: This phase entails reading through the data excerpts and ensuring that there are identifiable differences between themes.

v. Define and Name Themes: Themes need to be clear and distinctive and tell a story.

vi. Report: This phase entails reporting the coded themes as well as sharing themes.

4.4 Coding of Data

The process of data gathering involves the administration of interviews where open-ended questions are posed to participants, resulting in qualitative replies. Qualitative data is derived from the respondents' intentions in relation to the questions asked, which are then coded, conditioned, and categorised into themes. The coding processes involved the following steps:

i. The first step in the coding process was open coding, which involved the identification and labelling of codes from the data without any predetermined preconceptions.

ii. During the process of axial coding, it was important to group together codes that are connected to each other into bigger categories or themes.

iii. Selective coding is the concluding phase of the coding process when the researcher focuses on the development and refinement of the most noteworthy themes.

iv. The constant comparison method involves the ongoing process of comparing data, codes, and developing themes as one progresses with the analysis of the data.

v. Memo writing involves using the functionality of NVivo to generate memos to document thoughts, interpretations, and insights as one advances through the analysis process. Memorandums serve to effectively record and document one's cognitive processes.

vi. The NVivo software facilitated the retrieval of coded chunks of text or audio that are associated with the nodes or themes. This functionality enabled the

process of examining and analysing data within the framework of thematic contexts.

vii. Validation is an essential step in the research process where the themes that were identified are validated to ensure their accuracy and representativeness.

4.5 Overview of the Findings

Table 7 (below) provides the nine (9) themes distilled from the thematic analysis process. In the table, each theme is categorised and description briefly. The subsequent tables depict the summary of the findings (codes and themes for each objective) as well as the respondents. These themes will be explained about the research objectives in the subsequent sub-sections that will follow.

Table 7

Summary of Emerging Thematic Analysis Themes

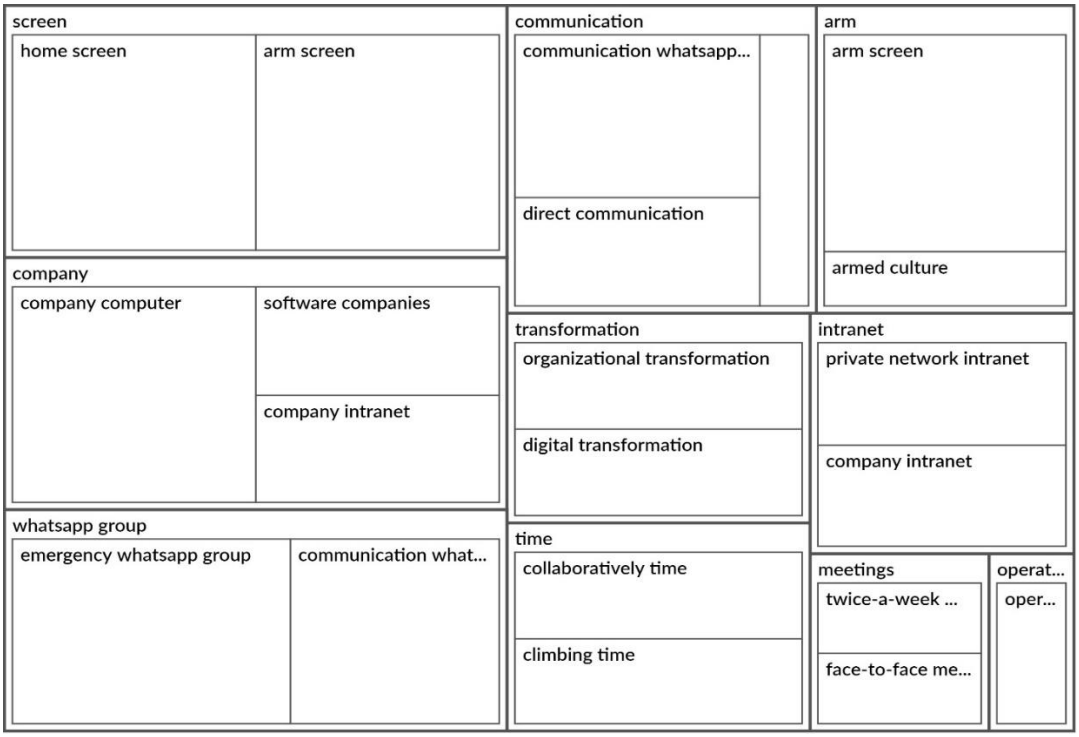
Themes	Codes	Summary
Digital Communication Tools	• Email • WhatsApp • SharePoint • Microsoft Teams	These digital communication tools are used in the ARM workplace.
Adoption Challenges	• Resistance to Change • Technical Challenges Training and Support Gaps • Cultural Transformation	These are some of the challenges that organisations may face when adopting digital communication tools.
Operational Efficiency	• Real-Time Data, • Quick Decision-Making • Productivity Improvement • Cost Reduction	Access to real-time data, the ability to make rapid decisions, increased productivity, and decreased expenses are just some of the ways in which digital communication technologies may assist to boost operational efficiency.
Employee Engagement	• Employee Feedback • Willingness to Change • Skill Development • Job Security Concerns	The effective implementation of digital communication technologies relies on the active participation of the workforce. Organisations should foster open communication, address employee worries about change, and provide training and development opportunities.

Leadership Support	• Leadership Commitment • Top-Down Approach • Leadership Support • Leading by Example	The backing of upper management is crucial for the widespread use of new forms of electronic communication. Leaders need to be enthusiastic about digital technology, share the positive effects of the shift with their teams, and set an example themselves.
Benefits of Digital Communication	• Improved Collaboration, • Faster Information Access • Streamlined Workflows • Increased Accountability	There are several ways in which digital communication technologies may enhance productivity, efficiency, and effectiveness in the workplace.
Implementation Strategies	• Strategic Roadmap • Change Management • Employee Training • Communication Strategy	ARM needs a plan for how it will integrate new forms of electronic communication into their operations. Change management, personnel training, and open lines of communication are all essential components of the strategy you lay forth.
Use Cases and Examples	• Machine Breakdown Response • Real-Time Problem Solving • Emergency Communication	There are several situations in which digital communication technologies are useful, including responding to machine breakdowns, fixing problems in real time, and exchanging critical information during an emergency.
Future Prospects	• Digital Transformation • Innovation Opportunities • Scalability • Future Technologies	Digital communication tools are a significant aspect of digital transformation. Businesses should be open to change and experiment with novel use of digital resources to boost efficiency.

The figure below provides a diagrammatic presentation of the themes and sub-themes identified in the study after applying NVivo as the data analysis tool.

Figure 5

Big Themes Data



4.6 Thematic Findings

The emphasis in this section is on the necessity to offer thematic data presentations. The study adhered to the specified objectives and therefore, the presentation of findings is structured in alignment with these objectives. The objectives of this study are:

i. To establish how employees at African Rainbow Minerals engage in internal digital communication practices.

ii. Understand the effectiveness of digital internal communication within African Rainbow Minerals according to employees.

iii. To understand the extent to which digital platforms, contribute to achieving operational excellence in internal communication at African Rainbow Minerals.

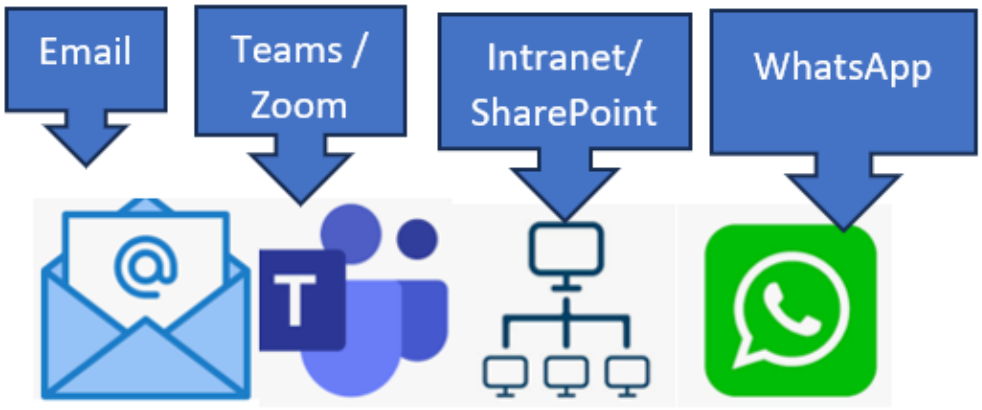
iv. To appreciate possible recommendations that can be made to address existing barriers to the use of digital communication within African Rainbow Minerals.

4.6.1 *Internal Digital Practices of Communication in African Rainbow Minerals*

The study was designed to identify the common digital communication tools that are used by the employees of ARM in their communications. Digital tools are the mainstay of communication in modern-day operations of organisations and, depending on areas of location, different tools are used. The study observed that four digital communication tools were the most popular, namely Email, WhatsApp, SharePoint/Intranet, and Microsoft Teams/Zoom. All 15 respondents attested to the use of the four digital tools. The figure below shows the internal digital communication tools used in ARM's operations.

Figure 6

Digital Communication Tools



Participant 8 had this to say:

> *"We have different tools; however, it is apparent that all of these are not integrated perfectly. The various ad hoc solutions we have now simply do not fit together properly, and they will generally only provide an imperfect solution for our communications needs."*

Participant 2 corroborated by saying:

> *"E-mail tool is the most commonly used tool if the communication is official. It is from the emails that other tools are used such as WhatsApp to informally discuss and Teams to have meetings."*

Participant 15 had this to say:

> *"E-mails are the most common for all formal communications. However, we have a WhatsApp group as a department where we share emergency updates and then we use SharePoint & Microsoft Teams."*

Since the advent of the internet, email has become the centrepiece for communication in the corporate space. It has become a must for every organisation to have an email address to the extent that the trend has moved to have personalised email addresses rather than the use of generic ones which is viewed as unprofessional (Einssohn & Schwartz, 2019).

WhatsApp as a tool especially, in developing and emerging economies, has proved to be the backbone of digital communication, and corporates have also gravitated towards its usage in some cases even as a formal communication channel. The wide accessibility and usage of WhatsApp have positioned it as an indispensable tool for businesses aiming to compete effectively in both local and international markets (Urien et al., 2019). The platform's instant, reliable, and cost-effective communication capabilities make it an appealing choice for businesses operating in developing and emerging economies.

From the responses it must be noted that SharePoint and Microsoft Teams were mentioned and had to do with conducting meetings in departments within the company. Several participants alluded to the fact that SharePoint and Microsoft Teams are important for employees to collaborate virtually and conduct meetings.

Participant 4 had this to say:

> *"We use MS Team especially for collaboration of reports where ARM [is] able to write the report or as the other person's is writing a report. So, we can co-produce one report but sitting in different environments. So that's the system that we are using, the MS Teams Collaboration."*

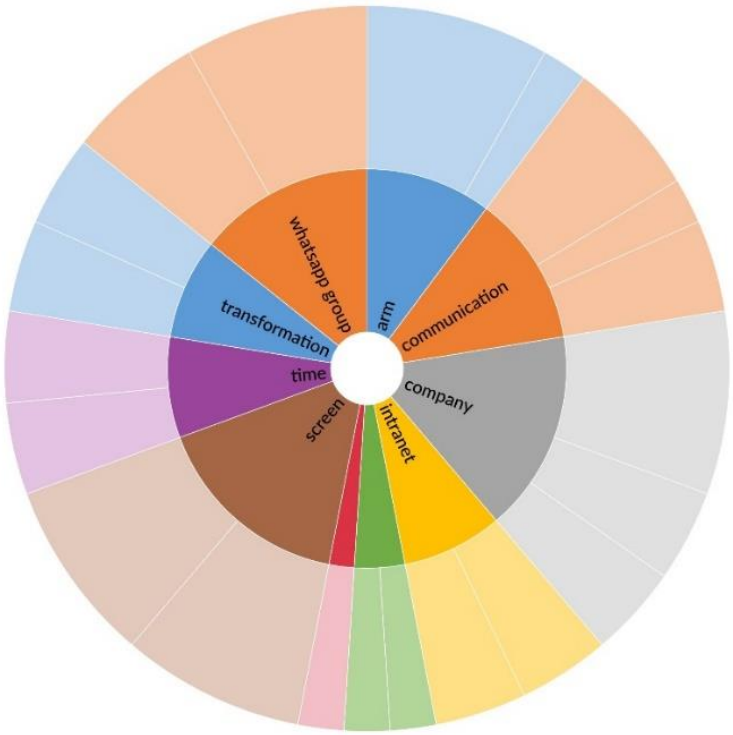
Participant 11 said:

> *"Mostly by email, sometimes over phone. We've got twice a week teams meetings in case everyone isn't in the office, but the bulk of it is by email."*

From the responses of the participants, it is clear that digital communication tools are being used and the tool used is premised on the need and goal for the communication. Emails and WhatsApp are digital tools used to disseminate information formally and informally and Microsoft Teams and SharePoint are used when employees are having their meetings especially from different locations.

Figure 7

Participants' Categorisation of Different Internal Digital Tools



The figure above shows the NVivo analysis done on replies to the question on internal digital communication tools. As can be deduced from the chart, the terms WhatsApp and email featured extensively as the most widely used tools by employees.

4.6.2 *Effectiveness of the Use of Digital Tools*

Objective 2 of the study was to understand how effective the digital communication tools from the perspectives of the participants were. Several responses provided insight to the study on the views of participants with regards the effectiveness of the use of digital tools in communication. The diagram below is a breakdown of the words that were accrued from the responses to the questions that pertained to assessing the effectiveness of the digital tools used by ARM employees.

Figure 8

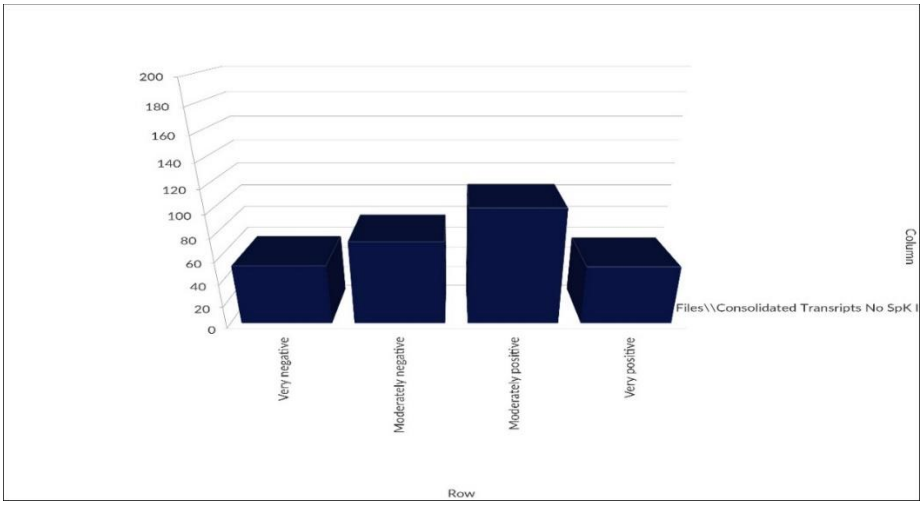
Word Tree of Digital Tools



A brief survey of the responses provided by the participants showed that, although digital tools are the contemporary go-to choices for communication, they have their challenges. These are exacerbated when employees are slightly older and not au fait with digital communication tools.

Table 8

Participants' Response on the Effectiveness of Digital Tools



From the responses provided by the participants and having the responses analysed by NVivo it was shown that most of the participants believed that digital tools were

highly effective in doing what they were required to do. The following are the themes identified from the responses of the participants to the interview questions on the effectiveness of digital tools for communication used by ARM employees.

Theme 1: Improved Communication

This is a theme that featured consistently in the responses of the participants. According to participants, digital tools allow them to engage and communicate effectively and provide communication timeously. Depending on the situation, the need, and the time factor, the four identified digital tools are used interchangeably to ensure that communication flows and reaches the intended recipients at the intended time and manner.

Participant 9 had had this to say:

> *"it's important to have digital ways to communicate because you can't just quickly run down the corridor and um and speak to someone. You need a digital way of getting hold of them."*

Participant 13 concurred with participant 9 by stating the following:

> *"You are able to communicate in time and get feedback faster. It has improved the communication processes."*

Theme 2: Collaboration

This is another prominent theme and entails improved collaboration amongst the employees in the sense that, despite the dispersed geographic locations, people can still work together. It seems that the emergence of Covid-19 made the company to realise the importance of the adoption of digital tools to ensure that work and production continued albeit virtually.

Participant 7 had this to say:

> *"It [helped] really in a great way because from personal experience, before COVID hit we used to travel a lot to the mines. Sometimes we would just really go for a one-hour meeting, and you'll have to come back at the end of the day. So yeah, having digital internal communication tools help with being able to communicate in real time faster and still be able to see each other special expressions in in online communication tools and get the work done quicker."*

Participant 6 had this to say:

> *"It allows for one to work with someone who is another place and collaborate and finish a task as assigned."*

Participant 15 echoed these sentiments and stated it thus:

> *"One can work with someone who is not in the same physical space and get things done rather than to travel and go to that place."*

Theme 3: Adoption Challenges

As shown Table 8, not everyone was in agreement with the mentioned themes. A significant number of participants were of the view that, despite the importance of digital tools, their application and adoption of the tools renders them ineffective and that they fail to achieve the intended goals.

The findings show that many participants had been aware of the existing digital communication technologies at ARM. Regarding the digital communication tools and adoption challenges, the findings indicate that ARM uses a variety of digital communication tools, including email, SharePoint, WhatsApp, Microsoft Teams, Intranet, and virtual meetings. While these tools offer numerous benefits, ARM faces

certain adoption/use challenges, such as lack of access to technology, poor network connectivity, language barriers, digital literacy gaps, and resistance to change.

Participant 5 had this to say:

> *"A set of unfriendly heterogeneous instrument mix that we possess. The process of navigating these resources to find appropriate information can prove as intimidating an exercise."*

The quotations below summarise the sentiments of the respondents who endorse the views above.

Participant 1 had this to say:

> *"Many people experience frustrations when they encounter digital communication technology such as emails, SharePoint, WhatsApp on mobile phones, etc. They are often characterised by less efficiency, and there is always a doubt about whether one's communication will be delivered successfully."*

Participant 11 had this to say:

> *"The use of digital communication technologies has been cited as another cause for miscommunication. More and more novel devices are being introduced and there is no agreement on how to use them."*

The phenomenon of resistance to change and cultural adaptation is a topic of significant academic interest. It relates to the tendency of individuals or groups to exhibit opposition or reluctance towards embracing new ideas, practices, or norms, particularly when they conflict with established beliefs, values, or traditions.

These findings resonate with the assertions by Shirish and Batuekueno (2021) that the use of novel digital communication technologies may face opposition from workers who are habituated to conventional communication techniques. Certain workers may

believe that digital communication lacks a human touch, hampers their productivity, or poses a risk to their employment stability. To mitigate this reluctance, it is recommended that ARM emphasises the advantages of digital communication, provides comprehensive training and assistance, and cultivates a culture that embraces openness towards change.

Theme 4: Employee Engagement

Certain workers have raised concerns over the potential for digital communication to result in their exclusion from critical information and decision-making procedures. Individuals may believe in-person encounters are more useful in establishing connections, cultivating trust, and facilitating mutual understanding. As was mentioned by Rho and Lee (2018), this view has the potential to result in disengagement and a reluctance to use digital communication technologies.

Participant 7 had this to say:

"I would be reluctant to assess the efficiency of the tools and platforms in case of collaborative and information exchange activities. It's not a personal experience."

Participant 6 echoed these sentiments:

"With regard to my own assessment, as much as I can say, digital internal communication tools have not led to any significant improvements in communicating within the organisation. To me, this is even worse than saying nothing at all for it may result into confusions or information flooding."

It was also noted that the continuous flood of digital messages and alerts has the potential to contribute to the phenomenon of information overload and digital fatigue experienced by workers. This aspect, as warned by Mather (2020), may result in diminished attention spans, challenges in task prioritisation, and a feeling of being overwhelmed. To tackle this matter, it is recommended that ARM adopts tactics aimed

at minimising redundant communication, fostering awareness in digital interactions, and motivating staff to take periodic breaks from digital devices.

Participant 9 had this to say:

> *"I would be reluctant to assess the efficiency of the tools and platforms in case of collaborative and information exchange activities. It's not a personal experience."*

Participant 2 had this view:

> *"It does no good for me to offer such advice because of my scanty understanding about online internal affairs means". This fact is what I have seen. Neither have I worked much in this line for this to be my observation.''*

The presence of technical difficulties and access barriers poses significant challenges in several domains. Nel and Boshoff (2021) opined that these issues hinder the smooth functioning of systems and impede an individual's ability to get the necessary resources or engage in the desired activities.

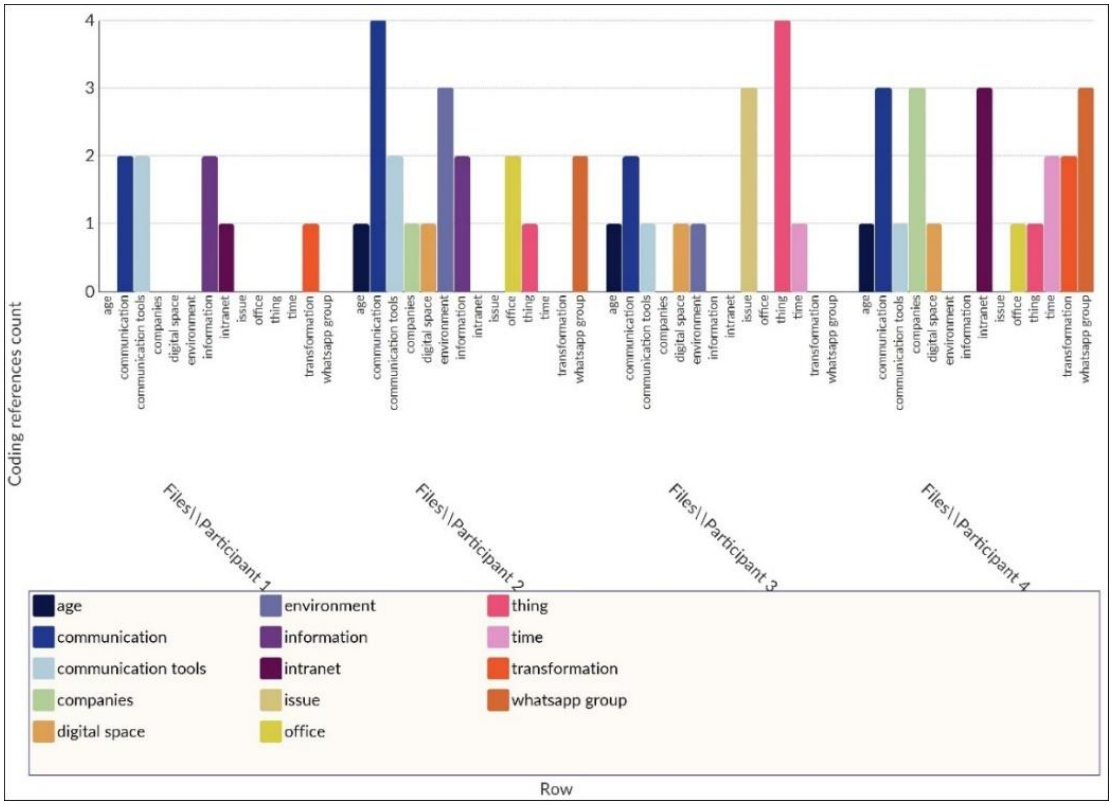
The findings also indicate that there exists a disparity among workers in terms of access to technology and proficiency in digital literacy, which may impede their ability to properly use digital communication tools. Most respondents noted that:

> *"The use of digital communication has often been hindered by technical challenges, such as inadequate network connection or device failure."*

Respondents further mentioned that it is essential for ARM to provide equitable access to dependable technology for all its workers, while also offering wide-ranging training and assistance to address any disparities in digital literacy.

Figure 9

Communication as the Buzzword on Responses



Four (4) participants from the fifteen (15) interviewed responded to the questions regarding the effectiveness of internal digital communication tools, terms such as transformation, time, and environment featuring based on explaining the state and way the tools had an impact.

4.6.3 *Contribution of Digital Communication to Operational Excellence*

Objective 3 of the study was to understand how digital communication would influence ARM's operational excellence. The diagram below provides a presentation of the keywords that came from the participants because of the responses to questions regarding the contribution of digital communication tools to enhance OpEx using NVivo's thematic analysis tool.

Figure 10

Thematic Word Tree

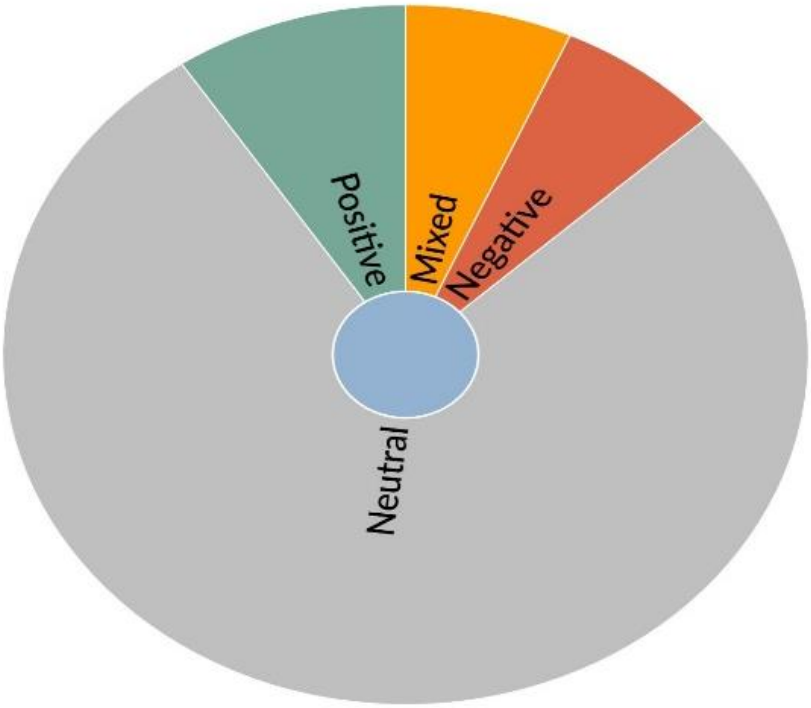


From the word tree above it is noteworthy that the participants were well informed about the subject matter. To understand this objective, it must be viewed through the lens of the previous objective that focused on effectiveness.

The previous sub-section provided both the positive and negative themes which were slightly similar in terms of the number of participants on each side. An analysis of the responses by NVivo showed that most of the views of the participants are rather neutral on the basis that the positives and the negatives mentioned in the previous sub-section tends to cancel each other.

Figure 11

Participant Response Trend



Theme 1: Improved Communication and Collaboration

To examine the contribution of digital communication tools to the OpEx of ARM, it is essential to keep the need for improved communication and collaboration in mind. It is common sense that, if the communication tools used improve communication and collaboration among the employees, it will likely translate to OpEx.

Participant 3 had this to say:

> *"In general, it has been largely detrimental. Communication today suffers from information overload that makes it hard to notice vital messages among all this flow. This has caused an upsurge of communication breakdowns."*

Participant 15 had this view of digital communication:

> *"The standard of communication appears to be on the downtrend. In fact, the adoption of digital technologies aimed at enhancing productivity has instead created confusion and misunderstanding among team members."*

Participant 6 stated it like this:

> *"The effect has been adverse. Instead of improving communications, those devices introduced another layer of complexity thus, making transmission of important messages even harder."*

Participant 4 had this view:

> *"These days, communication breakdowns appear more often. Digital tools were meant to streamline communication, but they have accidentally added more complications and puzzles."*

The findings indicate that digital platforms may not always enhance communication and collaboration. However, some respondents agree that digital platforms can greatly augment communication and cooperation inside an organisation via the facilitation of real-time information sharing, seamless collaboration between teams and departments, simplification of processes, elimination of communication barriers, and the promotion of transparency. Results also show that enhanced communication flow has the potential to expedite decision-making processes, mitigate mistakes, and bolster overall production levels.

Participant 11 echoed these sentiments by stating:

> *"It is interesting that digital communication technologies often complicate the situation instead of helping most of time. These tools may develop a lot of technical errors and these errors attract most of the effort in ensuring their effectiveness rather than effective communication."*

Participant 9 provided a more detailed account:

> *"ARM is restrained by this dependency on digital technology resulting in their fragmentation. Other major problems involved "loss of vital details and the human sense of connection to others."*

Participant 10 stated the following:

> *"Most often, these technologies have low efficiency and there is always a doubt regarding successful spread of information."*

Participant 7 stated the following aspect:

> *"Many people experience frustrations when encountering emails, mobiles, etc."*

Participant 5 had this to say:

> *"The very common miscommunication is also attributed to the use of digital communication technologies."*

Participant 15 put it as follows:

> *"There is also an increasing number of innovative device but no agreed protocol for their use."*

The above response emphasises that the successful use of digital communication technology in organisations relies heavily on effective communication and cooperation. According to Heidt et al. (2017), digital technologies can fundamentally transform organisational operations. However, their transformative potential can only be completely actualised if personnel possess the capability to effectively communicate and cooperate via their use. As observed by Gardiner and Andoh-Baidoo (2019), organisations may optimise the advantages of digital communication technology by enhancing communication and cooperation inside their operations. These issues can revolutionise organisational operations; nevertheless, their efficacy is contingent upon workers' proficiency in using them for efficient communication and collaboration.

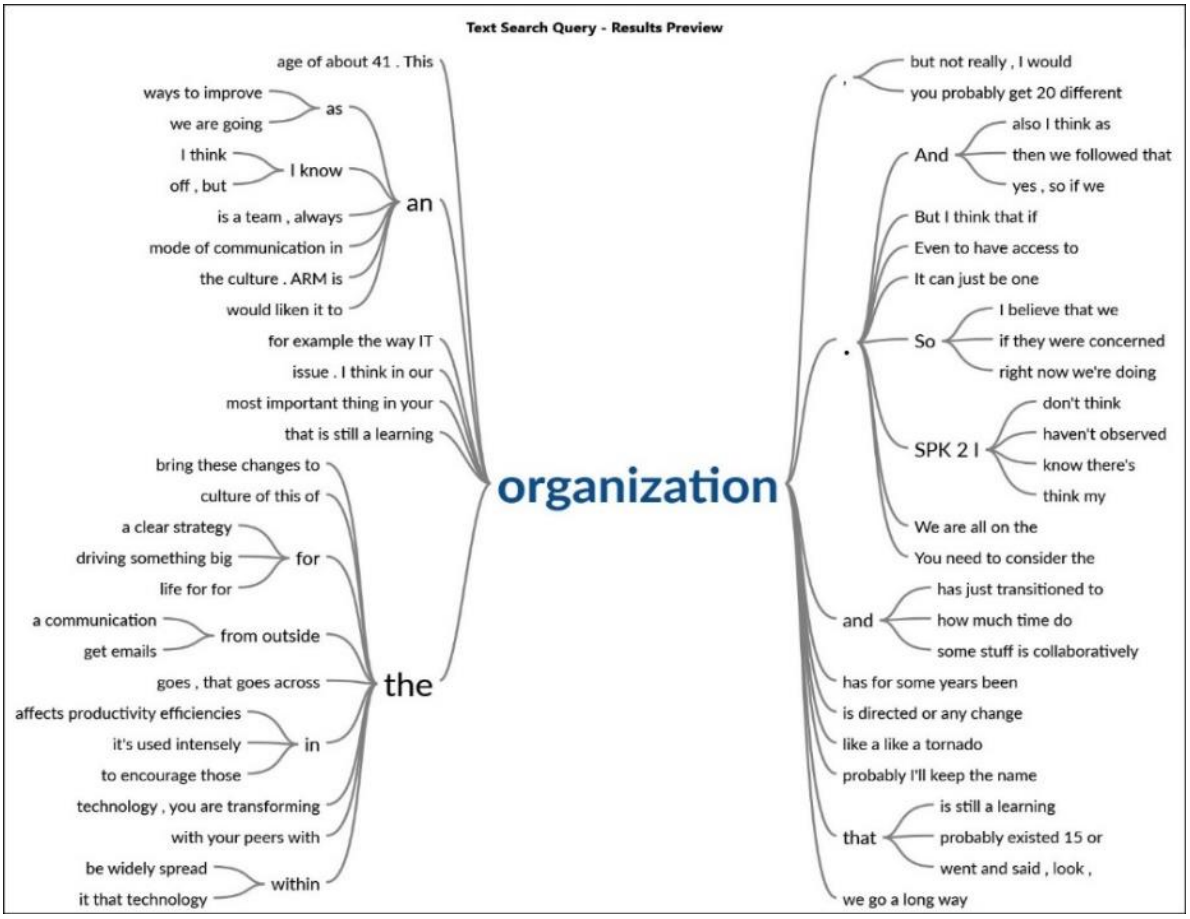
Theme 2: Decision-Making Processes

Digital communication platforms can improve decision-making. There is a wider consensus that digital platforms facilitate the acquisition of real-time data and facilitate the generation of insights based on data analysis, helping organisations to make prompt and well-informed choices. Through the examination of data from several respondents, ARM can now distinguish prevailing trends, discern patterns, and pinpoint areas that require improvement. As Aladwani (2001) noted, the use of a data-driven practice have the potential to result in more effective strategic planning, optimised allocation of resources, and heightened levels of customer satisfaction.

The results show that many respondents agree that digital platforms have the capability to automate routine jobs and workflows, resulting in the optimisation of processes and a decrease in mistakes and the need for rework. Many respondents concur that this automation enables individuals to allocate their time towards important and value-adding tasks, resulting in heightened levels of productivity and efficiency. Moreover, digital platforms have the potential to enhance customer service by offering real-time help and feedback methods (Bao, 2009).

Figure 12

NVivo Search Query



Applying NVivo to analyse the responses of the participants to this question showed that participants were of the view that, if the organisation sets up proper communication systems, it should have an impact on operational efficiency. ARM must ensure that digital communication systems are optimally implemented. Successful implementation will have a positive impact on the operational excellence of the organisation.

Theme 3: Scalability and Adaptability

Digital platforms provide organisations with the flexibility to scale and adapt, enabling them to effectively manage expansion, facilitate remote work, and respond to evolving requirements. As organisations experience growth, the use of digital platforms enables seamless expansion to accommodate a larger user base and increased data volume. Digital platforms also provide remote work arrangements, allowing workers to successfully interact from any location. Remote work enhances scalability and

adaptability, allowing organisation to accommodate growth, support remote work, adapt to changing needs, and scale to support new initiatives.

Digital platforms have a significant impact on attaining operational excellence via their ability to enhance communication, improve decision-making processes, increase efficiency, empower people, and facilitate the generation of insights based on data. Organisations that adeptly use digital platforms have the potential to attain a competitive advantage and establish long-term viability. While the organisation has invested heavily in digital campaigns, the results have been underwhelming.

Participant 9 had this to say:

> *“It seems that there is a consistent inclination towards the exploration of fresh instruments" to longer, more involved constructions such as "The concept of engagement is an ongoing challenge, although we have implemented many digital efforts, the effectiveness of these initiatives remains uncertain."*

Projects aimed at involving personnel have struggled due to perceptions of coercion and limited buy-in.

Participant 11 had this to say:

> *“Moving forward, we must find ways to more authentically engage employees and gauge performance that avoid these pitfalls.”*

New approaches are needed to solve the ongoing challenges of efficacy, involvement, and evaluation that have thus far hindered our efforts.

4.7 Chapter Summary

This chapter provided an analysis of the responses given by the participants in answering the three research questions based on the objectives. The chapter provided the presentations using thematic analyses supported using NVivo which set up the

themes discussed in the chapter. The chapter explained the significance of employee involvement, meticulous planning, comprehensive training, enhanced accessibility, and ongoing review underscored to maintain alignment between the organisation's digital communication strategy and the ever-changing demands and advancements in technology. The next chapter provides a discussion of the findings.

CHAPTER 5. DISCUSSION OF FINDINGS

5.1 Introduction

Chapter 5 entails the discussion of the data findings presented in the preceding chapter. While Chapter 4 concentrates on presenting the data, this chapter is dedicated to interpreting the data and formulating conclusions and patterns based on the variables.

5.2 Summary of Findings

The study aimed to examine the sentiments of ARM employees regarding the utilisation of digital communication tools and to assess how this usage could contribute to OpEx. In the 21st century, organisations are expected to align with the realities of the modern world, which includes incorporating the use of advanced digital communication tools.

The model presented below benefitted from the insights gained via the focus group evaluation that was incorporated to promote the validity and reliability of the emerging findings and congruence with the proposed model. The evaluation process, as clarified in the methodology section, was an important tool for obtaining views from experts who examined the relevance of the proposed framework for digital communication transformation and OpEx. The feedback gained was used to enhance the validity of the framework.

The core focus of this research was to comprehend and acknowledge the influence of internal communication on the workforce within ARM by exploring the effects of internal digital communication on OpEx. The ensuing summary highlights the main findings.

5.3 Internal Digital Communication Practices and Employee Engagement At ARM

Digital communication within any organisations has a strong impact on employee engagement. In the current digital landscape at ARM, optimising internal communication strategies is essential for increasing employee involvement and

creating a favourable work environment. The findings regarding this aspect are discussed in the following section.

The investigation commenced with the identification of commonly utilised digital communication platforms within ARM. The study noted four prevalent platforms employed by employees: WhatsApp, email, SharePoint/Intranet, and Microsoft Teams/Zoom. Email emerged as the main and formal channel or platform for official communication, serving as the primary means for disseminating official information. WhatsApp, while acknowledged, was recognised as an informal mode of communication. Employees engage in departmental WhatsApp groups where links to official communication are shared, and quick, informal exchanges take place. Zoom and Microsoft Teams are predominantly used for conducting meetings, particularly when physical gatherings are impractical.

To foster a culture of transparency, ARM recognises the importance of creating open communication channels. This involves sharing crucial information and updates, as well as encouraging feedback and discussions among staff. By promoting transparency, organisations can build trust and empower employees to contribute to decision-making. Moreover, ARM emphasises employee engagement through digital platforms. Employee engagement involves developing a sense of belonging, motivation, and commitment among employees towards the organisation's goals.

To meet the unique needs of employees, ARM tailors its digital communication and engagement strategies. They consider differences in communication styles, job interests, and cultures. This can include offering communication in multiple languages, creating flexible communication channels, and hosting virtual events and activities that cater to the interests and preferences of different employee groups.

5.4 The Effectiveness of Digital Internal Communication Within ARM

The advantages of adopting digital communication within the ARM context are multifaceted. Enhanced cooperation is facilitated through digital platforms that transcend geographical boundaries, promoting seamless teamwork and knowledge sharing. Expedited information retrieval is a direct outcome of the centralisation of data

and documents, reducing the time spent searching for critical information. Optimised operational processes result from the integration of digital tools, allowing for automation, efficient workflows, fewer mistakes, and a reduction in manual, time-consuming tasks. Perhaps most notably, the availability of real-time data through digital communication platforms empowers decision-makers with up-to-date information, facilitating effective and informed decision-making.

However, despite the evident advantages, poor adoption of digital communication is rooted in several challenges. Resistance to change among employees accustomed to traditional communication methods is a common hurdle. This resistance can be fuelled by a lack of awareness regarding the benefits of digital tools, insufficient training, or concerns about the security of digital platforms. Overcoming these challenges requires a comprehensive approach that includes targeted training programmes, effective communication on the benefits of digital communication, and robust cybersecurity measures to address data security concerns.

The study revealed that internal communication is commonly characterised as a distinct component within various elements or activities, rather than a comprehensive aspect. However, despite the communication limitations identified in the study, the level of employee productivity at ARM is deemed acceptable. The findings also revealed that a significant number of employees experienced some challenges, notably, the study's most striking finding was that the existing communication policy did not adequately ensure enhanced employee performance.

The study further concluded that the poor adoption of digital communication within ARM has profound implications for operational efficiency and productivity. Traditional, non-digital communication techniques may impose significant constraints that hinder the seamless flow of information and collaborative processes. Such limitations can lead to delays in addressing difficulties, culminating in reduced output levels and increased operational costs.

5.5 The Impact of Digital Platforms on OpEx in Internal Communication at ARM

It was observed that management's recognition and promotion of employee participation in training programmes yielded substantial improvements. The findings illustrate the levels of success achieved by employees within ARM, highlighting their satisfaction. Additionally, it demonstrated that factors such as the ease of adapting to new communication technology and the support provided by managers at remote workstations play significant roles in this success. However, the implementation of communication follows a hierarchical approach that can be reorganised.

Some views pointed to the need for improved and inventive organisational communication approaches and strategies substantiated by the communication obstacles encountered by ARM. The enhancement of employee performance through the improvement of the communication hierarchy is anticipated to contribute to the overall improvement of OpEx, ultimately facilitating the achievement of strategic goals.

In conclusion, the poor adoption of digital communication in ARM has repercussions for operational efficiency and productivity. The strategic integration of digital tools and a concerted effort to address resistance and provide adequate training is essential for unlocking the full potential of digital communication, fostering enhanced collaboration, streamlined operations, and informed decision-making.

5.6 Analysis of Digital Internal Communication Practices at ARM

The findings of this study on digital internal communication practices at ARM hold practical implications that can significantly impact OpEx, safety protocols, and overall productivity within this complex environment. One practical aspect is the potential enhancement of real-time communication. Utilising digital platforms, such as dedicated communication software or mobile applications can facilitate instant information sharing among mine workers, supervisors, and management. This immediacy can be crucial in emergencies, ensuring swift response times and enhancing overall safety protocols.

Moreover, as observed by Kim (2011), the analysis of digital communication practices in the mining sector can lead to the optimisation of workflow which has a direct bearing

on OpEx. By examining how information flows within the organisation digitally, it becomes possible to identify bottlenecks, streamline communication channels, and eliminate redundant steps. This optimisation can contribute to improved decision-making, resource allocation, and project management, ultimately enhancing OpEx.

Safety is paramount in the mining sector, and digital communication analysis can play a pivotal role in this regard. Monitoring and analysing communication patterns can help identify potential safety risks and areas where safety protocols may need reinforcement. For instance, the use of wearable devices with communication features can enable real-time tracking of personnel locations, ensuring that workers are within safe zones and are easily reachable in case of emergencies.

Additionally, the analysis of digital communication practices offers insights into employee engagement and satisfaction. Understanding how mining personnel use digital platforms for internal communication can shed light on their preferences, challenges, and areas for improvement. This information is crucial for tailoring communication strategies to better meet the needs of the workforce, fostering a positive work environment, and potentially reducing turnover.

Furthermore, compliance with industry regulations and reporting requirements can be facilitated through the analysis of digital communication. Monitoring communication channels digitally would allow organisations in the mining sector to track and document essential information, ensuring transparency and adherence to regulatory standards. This not only mitigates compliance risks but also contributes to a more accountable and responsible corporate culture.

Therefore, digital internal communication practices carry practical implications that extend to safety, operational efficiency, employee satisfaction, and regulatory compliance which all contribute to OpEx. The insights gained from such an analysis can inform strategic decisions, drive improvements in communication infrastructure, and contribute to the overall success and sustainability of mining operations. As the sector continues to evolve, leveraging digital communication tools becomes imperative for meeting the unique challenges and demands of the mining industry.

5.7 Examine How Digital Platforms as an Important Tool for Internal Communication Would Lead to Operational Excellence

Digital platforms play a critical role in facilitating internal communication and can significantly enhance operational effectiveness within organisations. Because digital platforms are crucial in operational effectiveness, they make a big contribution to OpEx by facilitating improved cooperation and connection among team members. Various platforms, including Slack, Microsoft Teams, and project management applications, provide centralised places that facilitate real-time communication, document sharing, and collaboration. The presence of interconnection enables efficient dissemination of information, mitigates the existence of isolated communication channels, and fosters a corporate culture that is adaptable and receptive.

Furthermore, digital platforms are of great significance in optimising operational procedures. These technologies play a significant role in enhancing the efficiency of workflows and project management by enabling the smooth and uninterrupted exchange of information. For example, the integration of task management systems with communication platforms facilitates the effective allocation of duties, monitoring of project advancement, and detection of possible obstacles. The degree of coordination achieved in this context significantly improves OpEx due to a reduction in both human mistakes and delays.

Digital platforms have made a significant contribution to OpEx by providing access to data-driven insights. The integration of advanced analytic tools inside communication platforms facilitates the extraction of actionable insights from various data sources such as communication patterns, project metrics, and operational data. By using this data, organisations may make well-informed choices, identify areas in need of development, and execute strategies that optimise overall efficiency.

In addition, digital communication channels enhance the capacity for distant work, fostering flexibility and bolstering the robustness of operational frameworks. The capacity to effectively communicate across long distances and enhances the flexibility of the workforce, enabling them to tackle operational obstacles without being limited by geographical boundaries. This adaptability not only enhances the contentment of employees but also guarantees the uninterrupted continuation of activities, even in the

presence of unanticipated setbacks. Noting the remote locations of most mining operations, this element is key to ensure that there is communication with various key stakeholders across the globe.

Digital platforms provide organisations with the opportunity to successfully communicate with their audience in the realm of customer relations. The integration of customer relationship management (CRM) systems with communication tools facilitates personalised interactions, streamlines inquiry processing, and proactive customer assistance. This practice improves the overall satisfaction of customers and adds to the achievement of OpEx by promoting customer loyalty and building a favourable view of the brand.

The automation functionalities of digital platforms enhance OpEx via the reduction of human labour and the mitigation of mistakes. By using automated task reminders and workflow automation, these systems effectively optimise regular procedures, enabling workers to allocate their attention towards high-value jobs that need creativity and strategic thinking. The use of automation not only enhances operational efficiency but also guarantees the maintenance of consistent operations.

In summary, the incorporation of digital platforms as indispensable instruments for internal communication serves as a fundamental pillar in attaining operational efficiency that is a main contributor to OpEx. These platforms help organisations negotiate the challenges of the current business environment by strengthening collaboration, offering data-driven insights, enabling remote work, improving customer connections, and automating repetitive processes. As organisations increasingly adopt digital transformation, the proficient use of communication channels will continue to be crucial in attaining and maintaining OpEx.

5.8 Theoretical Implications

The theoretical focus of the study was to examine recent studies on the influence of SQB theory on users' intentions to adopt and continue using information systems. At an organisational level, the phenomenon of SQB, identified as a significant obstacle to the implementation of digital communication, has been extensively discussed in influential publications by Kim and Kankanhalli (2009) as well as Polites and Karahanna

(2012). However, researchers have only recently begun to explore this phenomenon within specific domains of digital communication implementation. The examination of the literature clarified the significance of self-efficacy in users' information system adoption and desire to continue using it.

The use of digital communication technologies necessitates an all-inclusive approach to change management at the organisational level to effectively adapt to significant transformations in technology, tasks, and personnel (Kim & Kankanhalli, 2009). To enact a modification to an established digital communication technology, businesses must undertake the necessary adjustments to existing procedures and structures. To understand the resistance to digital communication technology utilisation in businesses, it is crucial to recognise the significant organisational persistence of the present function, sometimes referred to as the status quo. As was mentioned by Polites and Karahanna (2012), the persistent use of a current information system inside an organisation might serve as a significant impediment when implementing a new system.

With regards to SQB and digital communication, people often prefer to maintain the familiar over change. This bias can impact business decisions and behaviour, particularly in the adoption of digital communication strategies. African Rainbow Minerals may benefit from understanding the relationship between SQB and effective digital communication. Status Quo Bias has hindered ARM's adoption of new digital tools and practices because employees are comfortable with current methods. This resistance can hinder efforts to enhance digital communication efficiency and effectiveness.

Despite the potential benefits of digital communication technologies in improving operations and productivity, employees at ARM hesitate to adopt them due to the "status quo bias”. This reluctance can hinder an organisation's ability to keep up with evolving customer needs and technological advancements. Additionally, digital communication plays a critical role in achieving OpEx by optimising processes, fostering collaboration, and ensuring efficient information flow within ARM. African Rainbow Minerals may be unable to recognise the need to improve or update their digital communication strategies to align with OpEx goals due to their SQB.

Findings also showed that ARM needs to overcome its SQB to achieve operational efficiency in its digital communication by addressing resistance to change and fostering a growth mindset. To achieve this goal, it may be necessary to provide training and support to employees as they adapt to new forms of communication technology, to solicit feedback to identify problems with existing ways of communication, and to highlight the benefits of adopting innovative solutions.

The digital communication strategy should be in harmony with larger OpEx initiatives and company objectives for optimal strategic alignment. In this regard, there is a need to evaluate the efficacy of communication regularly to pinpoint problem areas and proactively adapt methods to suit evolving company needs.

This research offers insights for practitioners seeking to boost their understanding of the impact of SQB on user resistance towards digital communication system adoption as well as the leadership facets proposed by Shingo (1988). Furthermore, gaining knowledge of the psychological phenomena that contribute to the promotion of the status quo might facilitate the development of intervention strategies aimed at mitigating the impact of SQB. Furthermore, the examination of factors that mitigate user resistance to the installation of digital communication systems would provide valuable insights for practitioners seeking to enhance users' acceptance and ongoing commitment to information systems within organisational contexts.

5.9 Proposed Digital Communication Transformation and Operational Excellence Model

A research study is undertaken to be able to gain new insight and apply the new insight in offering solutions to challenges. Having looked at the subject matter of internal digital communication tools and their relationship to OpEx within the context of ARM, it is useful to provide a model that shows how OpEx can be enhanced by digital communication.

This approach aims to enhance customer experience and stakeholder value, while concurrently maintaining a safe and healthy environment. Many organisations have developed the concept of OpEx to promote progress. The use of programmes, names, tools, initiatives, and people alone is inadequate to facilitate enduring transformation.

Significant transformation can only be achieved when individuals possess a comprehensive understanding of the principles of OpEx and successfully integrate them into the fabric of their organisational culture (Ferreira et al., 2020). There is a need for leaders to shift their attention towards driving principles and culture, while managers should concentrate on building and aligning systems to promote ideal principle-based behaviour.

Within the space of digital communication and OpEx, contemporary understandings and applications of the SQB theory with Shingo's ideas propose that the incorporation of digital communication tools is in accordance with his conceptualisation of ongoing improvement and the eradication of inefficiencies. Digital communication platforms have the potential to optimise the flow of information, foster cooperation, and improve the reliability of procedures.

One fundamental argument of the Poka-Yoke idea, often known as error-proofing, may be applied to the incorporation of digital communication tools within operational procedures. By using these technologies, organisations could develop systems that mitigate mistakes and misunderstandings, therefore enhancing the precision and effectiveness of communication (Shirish & Batuekueno, 2021). This is consistent with the overarching lean philosophy of integrating quality into operations, especially within the domain of digital interactions.

Furthermore, the SQB theory with Shingo's (1988) concept of continual improvement, may be further applied to the domain of digital communication. Organisations are strongly urged to consistently evaluate and improve their digital communication strategy by using emerging technologies and adjusting to evolving requirements (Oschinsky et al., 2021). This method is in line with the conceptualisation of OpEx as a continuously developing and adaptable procedure.

The model for achieving OpEx via digital transformation is the deliberate incorporation of digital technology to augment and streamline an organisation's operational procedures. The objective is to use digital capabilities to attain enhanced efficiency, adaptability, and overall excellence in operational processes.

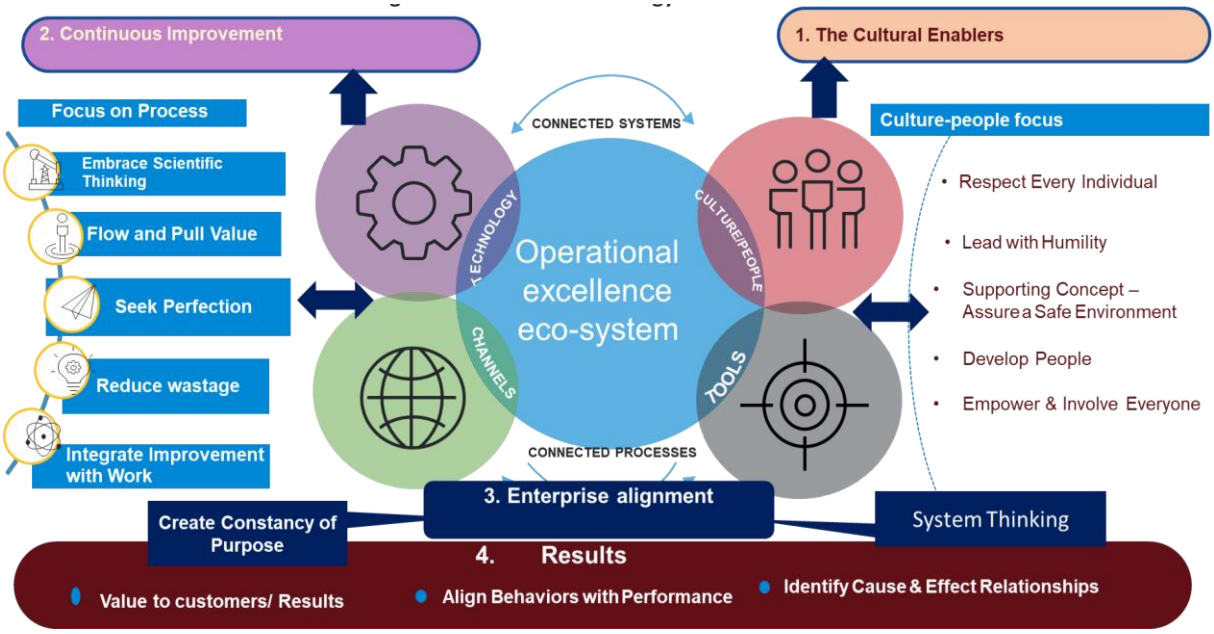
According to Niranga et al. (2022), the concept of digital transformation is characterised by an ongoing developmental process, marked by continuous learning and a relentless

pursuit of discovering the next avenue of customer value. This involves leveraging vast amounts of valuable data to enhance customer services and make more informed, superior decisions. The model may be classified as a comprehensive framework, with the precise elements of a digital transformation plan being subject to variation depending on factors such as industry, organisational size, and distinctive operational needs. African Rainbow Minerals needs to customise its strategy, considering its unique environment and goals when initiating a digital transformation endeavour to achieve OpEx.

The data findings indicated that ARM lacks the integration of digital communication transformation, a crucial element in aligning its policies, processes, and people. This integration is essential for fostering a culture centred around maximising the utilisation of digital platforms to enhance efficiency, deliver optimal results to customers, and attain OpEx.

Figure 13

Model of Digital Communication Transformation for Operational Excellence



Presented here is a discussion of the four (4) elements of the proposed model, that is: *a) cultural enablers, b) continuous improvement, c) enterprise alignment,* and *d) results*. These elements, as benchmarked to the SQB theory (Shingo, 1988; Weiler et al., 2019), place significant emphasis on achieving OpEx.

5.9.1 *Cultural Enablers*

Cultural enablers refer to factors or elements that facilitate the development and preservation of a certain culture within a society. Cultural enablers facilitate the participation of individuals inside an organisation in the process of change, fostering their growth in knowledge and eventually cultivating a culture that embodies OpEx (Weiler et al., 2019).

The realisation of OpEx is impossible using top-down instructions or the fragmented adoption of instruments. According to Nel and Boshoff (2020). The successful implementation of OpEx concepts requires a broad and collective dedication throughout the organisation. The establishment of a cultural framework where everyone in the organisation exhibits a commendable degree of respect for their peers is vital. The

establishment of a culture characterised by mutual respect and humility requires steadfast dedication over an extended duration.

5.9.2 *Continuous Process Improvement*

The process of continuous improvement starts with the establishment of a clear and comprehensive understanding of value as perceived by consumers. To ensure that systems are effectively developed to fulfil the demands of customers, it is essential to properly convey expectations (Nel & Boshoff, 2020). Every employee needs to possess an understanding of the concept of "goodness" in relation to their respective processes, whether in the creation of a product or the provision of a service. Furthermore, they should be equipped with the knowledge of appropriate actions to take in the event that their output fails to meet the desired standards.

As individuals in professional settings acquire the ability to recognise and eradicate inefficiencies, they will inevitably adhere to the guidance provided by Shirish and Batuekueno (2021) who emphasised that progress entails the eradication of wasteful practices. Moreover, a crucial prerequisite for achieving development lies in the diligent pursuit of objectives. It is important to avoid any misconceptions about the definition of improvement. The four objectives of enhancement should include the facilitation of processes, enhancement of quality, acceleration of speed, and reduction of costs. Significant importance is attributed to enhancing the speed and adaptability of the system's reaction (Weiler et al., 2019).

The scope of continuous improvement should not be limited to quality or cost but should include all dimensions of value as seen by the client. This includes factors such as innovation, quality, cost, flexibility, prompt delivery, and a full consideration of environmental health and safety. The pursuit of continuous improvement, with a specific emphasis on the smooth progression of value, requires the use of scientific reasoning and the ability to identify and eradicate inefficiencies that impede the uninterrupted flow of value (Shirish & Batuekueno, 2021).

5.9.3 *Enterprise Alignment*

One of the notable shortcomings in contemporary management practices is the emphasis placed on strategy formulation and planning, sometimes at the expense of due consideration for effective execution (Weiler et al., 2019). To achieve success, organisations need to establish management systems that effectively synchronise work and behaviours with principles and direction, using approaches that are straightforward, easily understandable, implementable, and standardised (Weiler et al., 2019). This approach is often referred to as Principle-based Strategy Deployment. The development of individual management styles by leaders without proper coordination may result in significant inefficiencies and wastage inside an organisation.

The implementation of strategy necessitates a management method centred on scientific reasoning, placing more emphasis on iterative cycles of learning rather than the pursuit of flawless plans. Establishing good communication, a process for achieving agreement, ensuring clear responsibility, and implementing systems to plan and monitor execution and countermeasures are crucial elements. Chirwa and Boikanyo (2022) explained that, for businesses to reach their competitive goals, every enterprise must assess how well their information systems are performing and how thoroughly they are being utilised.

This evaluation examines the technical abilities and operational effectiveness of an enterprise's information systems, diagnosing how well they contribute to business goals and efficiently use resources. This may be accomplished via the use of methodologies or comparable approaches. The collective outcome of separate efforts sometimes falls short of achieving a cohesive and harmonious integration. The ultimate achievement of generating value for consumers is contingent upon the efficient synchronisation of all value streams inside an organisation (Esselman, 2020).

5.9.4 *Digital Communication and Results*

The fundamental tenet behind the outcomes dimension is that firms are required to generate value, which is often described as a commodity or service for which consumers are prepared to exchange monetary compensation. This concept may include a multitude of stakeholders, including customers who exhibit a willingness to

pay, investors who display a willingness to spend, communities that demonstrate a willingness to support, and workers who exhibit a willingness to devote their trust, confidence, and careers (Esselman, 2020).

The primary objective of an organisation should be to prioritise the creation of value for its customers, investors, workers, and communities. Once again, it is advantageous to consider the notion of true north, which should serve as a guiding principle for decision-making and ongoing improvement. An organisation should be responsible for managing many dimensions of value, such as quality, adaptability to consumer needs, and the benefits it provides to stakeholders, such as growth, revenue, profit, safety, and environmental impact (Scheel et al., 2022).

The underlying principle is to emphasise the importance of assessing and evaluating relevant factors to effectively gauge progress and success. By focusing on measuring meaningful indicators, organisations may get valuable insights and make informed decisions that align with their objectives (Scheel et al., 2022).

Throughout history, the emphasis of measuring has mostly been on management, namely catering to the information required for effective planning, organising, and controlling. In a framework that prioritises broad participation as crucial for ongoing improvement and sustained effectiveness, it is essential to establish metrics that have significance for the individuals who will be using them. Hence, line associates need distinct methods compared to executives who bear responsibility for the entire organisation (Esselman, 2020).

Measures designed to ensure alignment with strategic objectives and foster a culture of continuous improvement may be established at many levels within the organisation. These measures serve to direct the attention of all stakeholders towards the relevant strategic activities, thereby facilitating progress and advancement of the whole firm (Weiler et al., 2019).

The manifestation of ideal behaviour is key to yielding sustainable outcomes over an extended period. This phenomenon occurs when the systems are following the principles of OpEx. Managers need to assist individuals in aligning their own beliefs with the concepts (Nel & Boshoff, 2023). Individual behaviours are ultimately driven by personal ideals. Leaders have the responsibility of establishing the necessary

conditions and mechanisms for individuals to assess the alignment of their values with the organisational performance objectives (Nel & Boshoff, 2023).

When a company set a goal to reduce consumer complaints, but observed a subsequent decline in its customer base, signalling the loss of key clientele. The approach used will have the effect of influencing individuals' behaviour in a manner that renders the act of lodging complaints an arduous ordeal, ultimately resulting in a significant decline in the frequency of phone calls made for this purpose. A more effective approach may include increasing the number of complaints, so affording each instance of dissatisfaction a chance for resolution.

Organisations like ARM must link how one process is interconnected to the other to ascertain cause-and-effect relationships and identify strategies for goal attainment. This approach has resemblance to root-cause analysis, however with a focus on value generation.

5.10 Evaluation of the Conceptual Proposed Model

It was deemed worthwhile to get the input of experts to review and evaluate the proposed digital communication transformation and OpEx model to deal with the unique challenges and situations of ARM. Peer review is a scientific evaluation process where manuscripts undergo scrutiny for qualities such as originality, validity, and potential impact by other experts (Tennant et al., 2017). The researcher approached three (3) communication experts and two (2) IT experts in the mining industry to critique the proposed model.

The five experts had over twenty-five (25) years of cumulative experience in the field of communication and information technology and that provides a strong basis for having strong critical analyses of the proposed model. Reviewers conducted independent assessments of the proposed model, subsequently providing recommendations for acceptance, rejection, or, more commonly, suggesting revisions that should be addressed. The feedback provided a strong basis and an opportunity to reflect and understand other areas that might have not been considered in enough detail.

According to the reviewers, maximum potential is achieved when the key elements of an organisation align with a unified foundation of principles related to OpEx, management systems, and tools. African Rainbow Minerals is often anticipated to cultivate distinct aspects of its culture while fostering the adoption of values that serve as a shared and unifying component across different levels of employment. As observed by Wu (2016), the concepts, systems, and tools that are present in the operational components of an organisation should also be reflected in the top-level leadership, personnel, and business processes.

From the researcher's perspective, engaging in a focus group review provided an opportunity to receive constructive feedback and enhance the overall quality of their work. This process allowed the researcher to present the findings to a panel of experts who offered insightful feedback and suggestions for improvement.

Expert focus group evaluation enables researchers to showcase their work to individuals with in-depth knowledge of the subject matter. The experts can identify potential gaps, propose alternative methodologies, and raise pertinent questions that the researcher may have overlooked. Khan et al. (2023) concur that, through this collaborative and constructive feedback loop, researchers can refine their work, bolster their arguments, and ensure the robustness and reliability of their findings.

According to Ajayi and Mmutle (2021), an effective communication model must show the following aspects:

- Based on a clear understanding of how the organisation is communicating.
- Identify communication issues persistent within the organisation.
- Seek to improve employee communication skills.

Conducting the focus group evaluation process involved experts in the field of Communication and IT. The review was intended to consider the aspects mentioned earlier. According to the assessments by the experts, the proposed model aligns with the specified parameters when evaluated against the criteria mentioned above.

It is imperative to note that 5 out of 5 of the experts were of the view that this proposed model is coming from a background of strong understanding of how ARM’s communication processes are.

Reviewer 1 had this to say:

> *"The model is coming from a strong understanding of how internal digital communication is done in the organisation of concern. This is shown by the model mentioning the how the communicant process is and what needs to change based on the input of the participants of the study".*

The views of Reviewer 1 were shared by Reviewer 5 who had this to say:

> *"The proposed model is coming from a person who understand in detail the communication frameworks of ARM".*

The reviewers of the model thought that the proposed model clearly and succinctly identified critical communication models. Four out of the 5 reviewers believed that the pertinent issues had been captured but it was not the case with the one expert who felt clarity was needed in some of the key communication aspects.

Reviewer 4 had this to say:

> *"I am of the view that the communication issues and what the model seeks to address has been addressed sufficiently".*

However, Reviewer 5 was of a different view and stated the following:

> *"The proposed model seeks to make communication effective for the sake of operational excellence however it silent on strategic communication which in my own view is a critical aspect of a communication model that seeks to enhance operational framework".*

Reviewer 4's perspective on the matter of strategic communication holds validity. Strategic communication is a customised approach designed to influence a specific target audience in particular ways (Scheel et al., 2022). In as much as strategic communication as a term is much more focused on communicating with external stakeholders, however it is crucial to influence the internal aspect. It is the view of the researcher that once internal communication systems are fixed, and it is possible to then influence the way the organisation communicates with other external stakeholders.

On the aspect of a model seeking to improve employee communication skills all the experts were of the view that the model had a component to deal with that aspect. Key to this aspect is that the model addresses all the critical aspect which include organisational culture, enterprise operations and the digital communication processes which speak to the improvement of communication skills.

Reviewer 2 had this to say:

"The model if implemented provides room for the practical improvement of communication skills. Employees have the chance to understand how communication is supposed to be with the implementation of the model".

Reviewer 5 had this to say:

"In implementing this model in the event that the organisation accepts, it will entail employees to engage into critical discussions about communication which undoubtedly help with the improvement of communication skills".

The responses of the reviewers from this review assessment model provided by Ajayi and Mmutle (2021) showed that, to a greater extent, communication and IT experts were of the view that the proposed model was effective and appropriate. It is also imperative to state that the reviewers were allowed to review the model on other frameworks of their choice however linking the model with the impact on OpEx.

As mentioned in the section above, the experts were provided with the opportunity to critique the model outside the parameters of the aspects provided by Ajayi and Mmutle (2021). Below are the summative key takeaways from reviewers in the evaluation of the proposed model from the identified key points:

5.10.1 *Holistic Approach to Operational Excellence*

This notion emphasises that OpEx is not merely about tools and initiatives but requires a comprehensive understanding of principles integrated into the organisational culture. This approach aligns with the idea that true transformation requires a cultural shift and adherence to principles. An integrated approach to OpEx considers every aspect of an organisation, including its people, processes and technology (Chiarini & Kumar, 2021).

It was the understanding of the reviewers that, for ARM to achieve OpEx, it is not enough to simply focus on improving processes and systems. A comprehensive approach, from leadership and culture to the way teams are organised and work together, was required. They highlighted that all aspects of an organisation are interconnected and that improvements must be made in every area to truly achieve OpEx. This is an area that was critical to note concerning the proposed model. Furthermore, the reviewers pointed out that the way teams are organised and work together must also be addressed.

A key area that the reviewers considered clearly articulated in the proposed model had to do with how the model validated the role of technology in the model. A holistic approach involves adopting and leveraging the right technology to support and enhance operational processes. This includes the use of data analytics and automation to improve decision-making, optimise processes, and identify areas for improvement.

5.10.2 *Integration of Lean Philosophy*

Any model should have a theoretical backbone. The integration of lean philosophy, such as the Poka-Yoke idea, into the discussion about digital communication tools was considered commendable. The reviewers indicated that linking error-proofing concepts to the incorporation of digital tools highlights the potential for technology to enhance precision and effectiveness in communication.

5.10.3 *Continuous Improvement*

All the reviewers emphasised that the continuous evaluation and enhancement of digital communication strategies, in line with the concept of continuous improvement, is of utmost importance. This recognition of the need for adaptability and ongoing development is crucial in the rapidly evolving landscape of digital technology. According to (Merriman et al., 2016), it is important to consistently evaluate one's digital communication strategy and operational procedures. This highlights the importance of identifying areas for improvement and effectively adapting to changing market circumstances and client expectations. Therefore, continuous improvement is a fundamental aspect of OpEx since it is a continuing and iterative process that is clear from the research findings.

5.10.4 *The Assessment of Performance*

Metrics are often used in business contexts including process efficiency, customer satisfaction, staff productivity, and cost savings as indicated by Munteanu and Racherla (2020). Reviewers agreed that the relevance of developing Key Performance Indicators (KPIs) to assess the effectiveness of digital communication and OpEx initiatives became evident through this research. This aligns with the expected outcomes outlined in the model, designed to optimise the company's performance.

5.10.5 *Customisation for Unique Environments*

Acknowledging the need for customisation based on the unique environment and goals of organisations, including ARM, the reviewers noted a practical understanding of the diverse nature of the mining industry. This approach recognises that a one-size-fits-all strategy may not be effective.

5.10.6 *Digital Transformation*

To attain OpEx, organisations must streamline and optimise their core business processes. Digital communication plays a pivotal role in facilitating real-time collaboration, automating processes, and bolstering data-driven decision-making.

5.10.7 *Integration of Technology*

According to Laukkanen (2016), the integration of systems has the potential to promote the exchange and accessibility of data, resulting in enhanced OpEx. From this research, it became evident that the implementation of an appropriate technological stack is of utmost importance. It is vital to ensure the smooth integration of digital communication tools with other corporate processes.

5.11 Conclusion

This chapter provided a thorough summary of the research results while considering the insights gathered from experts' evaluation and incorporating these into the model. The synthesis of literature and research findings accentuates noteworthy similarities, underscoring the pivotal connection between digital communication and OpEx. This synthesis illuminates the integral role that effective digital communication plays in optimising operational processes to achieve excellence. Moreover, a notable aspect that emerged from both the literature and empirical findings is the significance of the SQB in influencing transformative change within ARM.

Embracing change inherently introduces risks, and individuals may feel uneasy about placing themselves in situations where the outcome is uncertain. This inclination to maintain the status quo can significantly influence people's behaviour. This further underscores the dynamic interplay between digital communication strategies and the pursuit of OpEx within the organisational context. The acknowledgement of the SQB as a catalyst for change adds a layer of depth to the understanding of the intricate relationships shaping ARM's journey towards excellence. The following chapter provides a summative conclusion to the study and provides recommendations.

CHAPTER 6. CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This last chapter is about giving a clear position, actionable recommendations, and ideas for potential future research. Serving as the culmination of the entire study, this chapter encapsulates the essence of the exploration into the challenges encountered by ARM employees in using digital internal communication for the pursuit of OpEx.

6.2 Conclusion of Research Questions

Following are the key findings distilled from the study guided by the research questions.

6.2.1 *Internal Digital Communication Tools Used*

- The study showed that employees of ARM primarily made use of four platforms. These are WhatsApp, email, SharePoint, and Microsoft Teams.
- The formal channel or platform for communication is the email.
- WhatsApp was identified as a popular communication tool, albeit used informally when time is of the essence.
- SharePoint and Microsoft Teams are used mainly for meetings where the employees are not able to physically meet.

6.2.2 *Effectiveness of the Digital Communication Used*

- The study indicated that cooperation that transcends geographical boundaries is facilitated through digital platforms. In this manner, the digital communication environment promotes seamless teamwork and knowledge sharing.
- The availability of real-time data through digital communication platforms empowers decision-makers with up-to-date information, facilitating effective and informed decision-making.

- Despite its usefulness, the study showed that the effectiveness of digital communication is affected by poor adoption of digital communication. Several reasons for this poor adoption were uncovered.
    - Firstly, resistance to change among employees accustomed to traditional communication methods is a common hurdle.
    - In addition, there is a lack of awareness of the benefits of digital tools.
    - Insufficient training in the benefits and use of digital communication tools was also identified as an obstacle.
    - Finally, concerns about the security of digital platforms create a reluctance to use the digital communication tools available.
- The study reveals that internal communication is commonly characterised as a distinct component within various elements or activities of an organisation, rather than a comprehensive aspect.

The study findings conclude that the poor adoption of digital communication within ARM has profound implications for OpEx and productivity.

6.2.3 *Contribution of Digital Communication Tools to Operational Excellence*

- The study unveiled that management's recognition and promotion of employee participation in training programmes yielded substantial improvements. The findings illustrate the levels of success achieved by employees within ARM, highlighting their satisfaction as below.
- The enhancement of employee performance through the improvement of the communication hierarchy is anticipated to contribute to the overall improvement of organisational performance, ultimately facilitating the achievement of strategic goals.
- The poor adoption of digital communication in ARM has repercussions on operational efficiency and OpEx within ARM.
- The strategic integration of digital tools and a concerted effort to address resistance and provide adequate training is essential for unlocking the full

potential of digital communication, fostering enhanced collaboration, streamlined operations, and informed decision-making.

6.3 Assessment of the Research in the Context of the Aim and Objectives of the Study

This study was designed to explore how ARM employees use digital communication tools between the top, middle, and bottom levels of the organisation, and how that could lead to OpEx. The study was guided by the following objectives.

6.3.1 *Objective 1: To Establish how Employees at African Rainbow Minerals Engage in Internal Digital Communication Practices*

The study accomplished the primary objective—participants' utilisation of digital tools—through a comprehensive interview guide. The findings revealed that ARM employees used a versatile set of tools, including emails, WhatsApp, SharePoint, and Microsoft Teams, interchangeably based on the nature and requirements of the communication.

6.3.2 *Objective 2: Understand the Effectiveness of Digital Internal Communication within African Rainbow Minerals According to Employees*

Addressing the second objective, the study delved into assessing the effectiveness of digital internal communication at ARM. Chapter four dedicated a subsection to gather participants' perspectives on the tools' efficacy, revealing a notable improvement in communication and collaboration attributed to the use of internal digital communication tools.

6.3.3 *Objective 3: To Understand the Extent to Which Digital Platforms Contribute to Achieving Operational Excellence in Internal Communication at African Rainbow Minerals*

The objective aimed to establish the connection between digital internal communication tools and their contribution to OpEx within ARM. Chapter four dedicated a subsection to address this goal, revealing that, despite the significance of digital tools and their

contribution to OpEx within ARM, the way communication systems are introduced to the employees has a bearing on their effectiveness in enhancing OpEx.

6.3.4 *Objective 4: To Appreciate Possible Recommendations that can be Made to Address Existing Barriers to the use of Digital Communication within African Rainbow Minerals*

This objective entailed gleaning recommendations from participants to ensure that the study provides critical insights. Sub-section 6.5 in this chapter is dedicated to providing recommendations, thus fulfilling the aim of this objective.

6.4 Conclusion

The mining industry must adapt its business model if it wants to stay competitive. This necessitates embracing digital transformation and having a thorough grasp of the dynamic elements that control digital transformation mining. To help decision-makers and policymakers navigate the intricacies, it is necessary to get a full knowledge of how a range of factors interact with each other and how they impact each other. With this knowledge in hand, we can build a digital ecosystem capacity that makes Southern Africa's mining sector more digitally competitive.

According to the study's findings, there is a dearth of comprehensive studies examining the interplay of digital transformation dynamics in the mining industry. Moreover, decision-makers show a lack of comprehension about the interdependencies among various parts of digital transformation and the resulting dynamic patterns that develop with time. The mistaken belief that technology is the only driver of digital transformation arises from the lack of a holistic systems perspective.

As a conclusive key finding, this study uncovered an interconnectedness between digital communication and OpEx. Reviewers evaluated the suitability of the proposed model which plays a pivotal role in informing a way forward for ARM to decide upon. Simultaneously, this assessment can assist the researcher in enhancing the framework to ensure it is illustrated and communicated in a constructive manner, perhaps through the inclusion of examples. This approach is commonly referred to as peers providing

feedback to the research authors. This process of peers evaluating and offering feedback strengthen the quality of the research study.

However, keeping in mind that this assumption is not totally correct. The truth is that digital transformation is really sparked by the execution of a digital strategy and vision. The capacity to compete in the digital world and build a solid digital infrastructure is hindered by a lack of knowledge about the dynamics of communication's transition to digital platforms. The primary reasons of this are an immature common vision, an inadequate digital culture, and a lack of funding for digital projects. The use of digital technology allows for the growth of digital capabilities; however, these variables limit their development and OpEx. The result is a loss of digital competitiveness and digital disruption.

Additionally, the research investigated how external factors, such as the features of digital communication tools, organisational culture, and user experience, interact with Status Quo Bias to influence users' intentions within the context of operational excellence. The study suggests that effective digital communication strategies have the potential to positively impact waste reduction, enhance cooperation, and foster a proactive and continuous improvement culture, aligning with Shingo's influential work on operational excellence as proposed by the Status Quo Bias theory.

The examination of temporal aspects considered changes in employees' resistance to adopting new communication practices over time. The study highlighted the need for targeted interventions that organisations can employ to mitigate the impact of SQB on the successful implementation of digital communication tools for OpEx.

By focusing on the interplay between SBQ theory and users' intentions regarding digital internal communication for OpEx, this study offers insights into the psychological and behavioural factors influencing employees’ decisions. These insights can guide the development of strategies to effectively manage the implementation of digital communication tools, fostering a culture of adaptability and maximising the benefits of these tools for achieving OpEx within organisations.

6.5 Overall Recommendations

African Rainbow Minerals is dedicated to using digital communication technologies to facilitate and propel the process of digital transformation forward. The organisation is now engaged in the exploration of novel methodologies using digital tools to enhance its OpEx, while concurrently allocating resources towards the investment in prospective technology. One recommendation for ARM is to maintain a commitment to investing in employee training and assistance to guarantee that staff has the necessary skills and expertise to effectively use digital communication platforms. The following recommendations are made based on the primary and secondary data.

6.5.1 *Future Improvements and Innovation of Digital Internal Communication Tools and Platforms*

Recommendation 1: It is recommended to do a wide-ranging survey among workers to evaluate their requirements and preferences pertaining to digital internal communication tools and platforms. The implementation of a survey among workers is a crucial first measure in understanding their distinct requirements and inclinations concerning digital communication instruments. The survey needs to include inquiries about the most valuable tools, areas necessitating enhancement, and the attributes that these digital communication tools should have. The objective is to guarantee that the organisation allocates resources towards acquiring tools that are in line with the genuine needs of workers, hence promoting employee engagement and productivity. Furthermore, this practise displays a dedication to inclusion by actively including workers in the decision-making process.

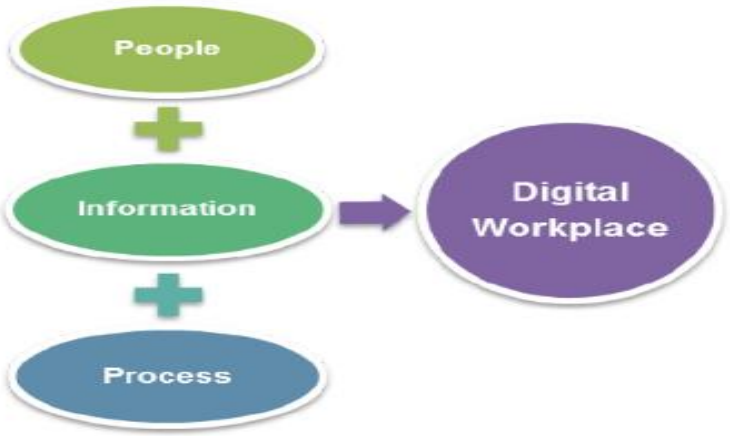
Digital platforms have the potential to significantly improve an organisation's efforts to achieve operational excellence in various areas. The integration and improvement of digital collaboration technologies, such as cloud-based programs, Microsoft Teams, SharePoint, Yammer, Email, and project management software, have become crucial in enabling efficient communication and collaboration among team members, regardless of their physical locations.

This not only supports remote work but also facilitates the dissemination of real-time information, cultivating a quicker and more networked workforce.

In today's fast-paced and interconnected world, digital communication tools play a crucial role in enhancing internal communication systems within organisations (Earnshaw & Liggett, 2023). These tools have revolutionised the way employees interact, collaborate, and share information, ultimately leading to improved productivity, efficiency, and overall organisational success and in the context of this study operational excellence (Earnshaw & Liggett, 2023).

Figure 14

Employees' Expectation of the Components of a Digital Environment



Source: Own, 2024

According to the illustration above, to have an effective digital workplace which is realised using digital tools is a process that also includes people and information aspects. It is the people (employees) who must share information critical to the operations of the entity amongst themselves using a digital tool (process) to realise a digital workplace. If one of the aspects is not in the best possible space or shape will affect the realisation of an effective workspace. This is what is the case with ARM, especially when it comes to the implementation of the use of digital tools.

The ability to incorporate the use of sophisticated analytics and data-centric decision-making tools plays a crucial role in enhancing operational procedures. Digital platforms can use extensive information to provide practical insights, so allowing organisations to optimise the allocation of resources, detect areas of congestion, and improve overall efficiency.

Recommendation 2: African Rainbow Minerals should formulate a strategy for the deployment and utilisation of digital internal communication tools and platforms. The development of a thorough strategy is crucial in ensuring the effective adoption and use of digital internal communication tools. The proposed strategy needs to delineate a pragmatic schedule for execution, guaranteeing a seamless transition that minimises any disruption to ongoing activities.

This communication strategy should consider the strategies and tactics that the organisation will use to effectively disseminate information to its workers about the impending changes. This plan should also encompass the measures that will be taken to address apprehension or reservations that may arise among employees, while concurrently fostering a sense of excitement and support for the proposed changes. Ensuring the explicit allocation of duties for the execution and continuous administration is vital to establishing accountability.

Achieving OpEx requires a holistic approach and therefore, this strategy must be supported by an approved budget to effectively guide and control expenditure. This budget should allow for both the acquisition of the required hardware and software as well as the training necessary to enable employees to make optimal use of the tools available. Finally, provision must be made for continual employee engagement around the implementation and use of these digital internal communication tools to ensure that challenges and opportunities are identified early on, and course corrections are made in time.

Recommendation 3: Following recommendation 2, staff should be provided with training sessions to enhance their expertise in using digital internal communication tools and platforms.

The implementation of new digital technologies is contingent upon ARM investing in training programmes that are specifically designed to cater to the individual demands of employees. The design of training programmes should be inclusive of all learning styles and provide accessibility for all personnel. This advice aims to enhance workers' confidence and proficiency in using the offered tools, hence mitigating possible barriers to change. The provision of convenient and flexible training methods, such as online

modules or workshops, will effectively cater to the needs of individuals with various working arrangements and schedules.

Recommendation 4: The digital internal communication tools and platforms must be designed in a manner that facilitates accessibility for all workers. The importance of ensuring accessibility, especially in contemporary work contexts characterised by diversity, cannot be overstated. This recommendation emphasises the need for accommodating workers who work remotely or outside of traditional office settings. This may include the process of carefully choosing tools that have interfaces optimised for mobile devices, ensuring that there is sufficient allocation of bandwidth to accommodate the needs of remote workers, and considering the incorporation of accessibility features to include employees with disabilities. By placing a high value on accessibility, the organisation actively fosters fairness in communication and guarantees that every person, irrespective of their specific work circumstances, can actively engage and contribute.

Recommendation 5: It is advisable to closely monitor the utilisation of digital internal communication tools and platforms, while also gathering input from workers on their level of satisfaction with those tools and platforms. The ongoing assessment of digital communication tools is crucial for maximising their efficacy in the long run. Through the analysis of use patterns, ARM can determine areas of achievement and areas that may need improvement. Gathering feedback directly from workers will yield significant insights into their levels of satisfaction. This will help ARM to swiftly address any challenges. This suggestion institutes an iterative process to facilitate continuous development, showcasing the organisation's dedication to being responsive and adaptable in its digital communication strategy.

6.5.2 *Recommendations for Other Senior Leaders and Managers*

Recommendation 1: Obtain the endorsement of upper-level executives for the implementation of digital internal communication tools and platforms. Obtaining endorsement from upper-level executives is vital for the efficacy of any endeavour, including the use of digital internal communication technologies. Senior managers have a crucial role in the allocation of resources, establishment of priorities, and cultivation of an innovative organisational culture. By securing the support and agreement of

executives, the organisation guarantees a dedicated commitment to the project. This recommendation highlights the importance of aligning the strategic objectives of the organisation with the incorporation of digital communication tools. It emphasises that this endeavour should not be viewed as an IT project, but rather as a strategic investment aimed at enhancing communication and collaboration throughout the organisation.

Recommendation 2: Facilitate effective communication with workers on the advantages of using digital internal communication tools and platforms. The establishment of effective communication is necessary to provide a comprehensive understanding among workers about the goal and benefits associated with the use of digital communication technologies. This guideline underscores the need to use straightforward and concise communication strategies to cultivate employee awareness. By elucidating the advantages, such as increased operational effectiveness, heightened collaborative efforts, and improved information accessibility, the organisation may foster excitement and garner support for the implementation of the new solutions. Effective communication is crucial in effectively addressing any concerns or potential opposition, therefore cultivating a favourable disposition towards the proposed changes.

Recommendation 3: It is recommended to provide thorough training sessions to employees to enhance their proficiency in utilising digital internal communication tools and platforms. Personnel must have the requisite abilities to properly use the newly introduced technologies. Tailored training programmes that cater to the individualised requirements and preferences of workers will significantly contribute to the successful adoption of such tools. The recognition of varied working arrangements within the organisation is reflected in the focus placed on convenience in training delivery. Training has the dual purpose of imparting technical skills and fostering confidence, therefore mitigating any concern associated with the adoption of novel technologies.

Recommendation 4: It is important to ensure that the digital internal communication tools and platforms exhibit accessibility features that cater to the needs of all workers. The issue of accessibility is crucial, particularly within organisations that include a range of work environments. The establishment of accessibility for technologies used by workers who work remotely or are not situated in a traditional office setting is vital to

accommodate diversity. This recommendation underscores the need to mitigate potential obstacles because of the varying working situations. The emphasis on accessibility signifies ARM's dedication to fairness and acknowledges the need for providing equal possibilities to all workers to effectively use digital communication technologies.

Recommendation 5: It is advised to closely monitor the utilisation of digital internal communication tools and platforms, while also gathering input from workers on their level of satisfaction with the tools and platforms. The continuous enhancement of a digital communication strategy is important to ensure its enduring success. Gaining insights into the usefulness of tools may be achieved via the monitoring of usage patterns and the collection of feedback directly from workers.

This proposal encompasses the implementation of a feedback loop that enables the organisation to continuously adjust and enhance its communication strategy. By integrating employee input, ARM showcases its responsiveness and dedication to providing solutions that align with the requirements and anticipations of its workforce.

6.5.3 *Using Digital Platforms to Further the Organisation's Operational Excellence*

Recommendation 1: Employ digital platforms to automate various chores and procedures. The use of automation has the potential to significantly improve operational efficiency via the optimisation of repetitive and time-consuming processes. Digital platforms can automate a range of operations, therefore reducing the potential for mistakes and enabling people to focus their attention on tasks that are more strategic and provide more value. By using automation, ARM will have the ability to enhance resource allocation and ultimately enhance total productivity. This guidance is per the principles of OpEx since it aims to eliminate inefficiencies and improve workflow within the organisation.

Recommendation 2: Develop and implement the proposed Digital Communication Transformation for Operational Excellence Model WHI (figure 13) to drive sustainable operational excellence and enhance overall organizational performance. To achieve operational excellence (OpEx) through digital transformation, incorporate digital

technology to enhance and streamline processes. Cultivate a culture of mutual respect and collective dedication to embody OpEx. Continuously improve processes by understanding customer-perceived value and eliminating inefficiencies. Implement principle-based strategy deployment to ensure synchronised management practices, focusing on iterative learning, clear communication, and effective execution. Prioritise creating value for customers, investors, employees, and communities by measuring meaningful indicators that align with organisational objectives.

Recommendation 3: Employ digital tools to enhance staff cooperation and communication. Digital platforms are of utmost importance in facilitating and enhancing cooperation and communication inside an organisation. Various technological tools, such as instant messaging, project management software, and collaborative platforms, play a crucial role in enabling real-time communication. These tools effectively dismantle organisational barriers and foster cross-functional cooperation. Enhanced communication plays an essential role in facilitating effective decision-making and problem-solving processes, hence contributing to the overall OpEx of an organisation. This suggestion underscores the need to establish a collaborative atmosphere to enhance workflow efficiency and bolster organisational agility.

Recommendation 4: Data is an invaluable resource for organisations that strive for operational improvement. Digital platforms facilitate the acquisition and examination of data from many sources, thereby facilitating valuable insights into operational procedures and efficacy. Using data analytics, organisations can spot patterns, accurately identify areas that need enhancement, and make well-informed choices to increase OpEx and effectiveness. This parameter emphasises the need for using data-driven decision-making tools to facilitate ongoing development and attain OpEx.

Recommendation 5: Employ digital platforms to aid in the creation and implementation of training and development initiatives for organisational personnel.Continuous learning and skill development are integral elements for achieving OpEx. Digital platforms can be used to develop and disseminate training programmes, therefore enabling workers to access learning materials anywhere and at any time. This recommendation highlights the need to allocate resources towards the professional growth of employees to strengthen their skills and knowledge, because this will lead to improved operational performance. By using digital technologies for training, ARM will be able to adjust to

evolving requirements and cultivate an environment that promotes ongoing development.

Recommendation 6: Employ digital platforms to cultivate a work environment that is both stimulating and conducive to employee wellbeing. The attainment of OpEx is contingent on the presence of employee engagement and satisfaction. Digital platforms have the potential to be used to establish a work environment that is characterised by increased interactivity and supportiveness. This may include intranet portals, social collaboration tools, and procedures for soliciting employee feedback. Organisations may augment the work environment to effectively heighten employee contentment, productivity, and retention. This suggestion is in accordance with the concept that a staff that is motivated and engaged is more inclined to make good contributions to activities aimed at achieving operational excellence.

Recommendation 7: Evaluate the efficacy of the organisation's current communication channels, tools, and procedures. Digital communication tactics may be better tailored to meet individual demands when communication gaps, strengths, and weaknesses are identified. Such evaluations are used to ensure that the correct channels are being used to convey the correct messages to the right individuals.

There is a need to evaluate the existing status of digital platforms, newsletters, and intranets as means of internal communication to pinpoint shortcomings and determine the efficiency of ARM’s information flow by examining its feedback systems. The audit is useful for finding deficiency and improvement areas in internal communication. This checks that the company's aims and the communication plan are congruent. Employees can voice their opinions on the efficacy of communication due to the establishment of a feedback system. Improving tactics for digital communication can benefit greatly from this understanding.

Recommendation 8: To successfully respond to changing circumstances, agile leadership should entail being adaptable, collaborating, and focusing on continuous improvement. It is therefore recommended that agile leadership is promoted because it paves the way for easy dialogue and rapid decision-making. Agile leadership promotes an atmosphere of trust and open communication by providing resources that workers may use to feel comfortable sharing information digitally.

Agile leaders can swiftly adapt communication tactics to tackle novel issues and seize new opportunities in the ever-changing mining sector. Agile leadership encourages teamwork and communication across different departments. When it comes to mining, this is essential for the efficient coordination of many departments and teams. Open communication and sharing of knowledge may be fostered by agile leaders.

Iterative improvement as a key component of agile methodology, when applied to digital communication, provides ongoing improvement in response to feedback and evolving business requirements. There is also a need to encourage a spirit of curiosity and experimentation to welcome innovative forms of digital communication. Similarly, dismantling the ARM silos by promoting cross-functional cooperation and communication and helping leaders improve their digital communication abilities by providing them with training and resources is highly recommended.

Recommendation 9: African Rainbow Minerals should seriously consider the role of organisational culture in any change and adoption process. The values, attitudes, and practices that are prevalent in an organisation have a significant impact on the way its members collaborate and engage with one another. The effective deployment of digital communication technologies is enhanced by a constructive and communicative culture.

It affects the level of engagement with these technologies and the amount of information shared by employees. African Rainbow Minerals should promote an environment of openness and trust to inspire people to talk to each other online, foster a sense of belonging by encouraging online teamwork and information exchange, and make sure that the organisation's digital communication is in line with its beliefs and aims.

For internal digital communication to be successful, it is critical to cultivate a culture that values open and honest communication. Everyone on staff should feel comfortable providing comments, suggestions, and information. It is also easier to execute digital communication methods in a culture that has a strong affinity for technology and digital tools. Being open to trying out new types of communication technology is part of this, as is making use of digital platforms. The culture of an organisation may influence how employees feel about taking risks and being innovative. Considering recent developments in digital communication, this is an important consideration. The key to

successful digital communication is a culture that encourages taking risks and learning from mistakes.

The strategic and operational efficacy of digital communication ARM may be enhanced by including an audit of internal communications, agile leadership methods, implementing robust information security measures and a supportive organisational culture. A more connected and agile workforce may be achieved by customising communication methods to meet the specific difficulties faced by the sector.

6.6 Recommendations for Further Research

The research study specifically focused on ARM Corporate office, but it could be expanded to the operations or actual mines where every principle of mining or operations is crucial to the day-to-day operations of the organisation. Other valuable avenues of research include:

- Investigating the role of leadership type on the adoption, use, and success of digital internal communication tools within an organisation.
- Determining if Albert Bandura's (1986) social learning theory has a bearing on the way digital internal communication tools are assimilated and used within an organisation.
- Studying the speed at which different generations within the workplace adopts digital internal communication tools, how well they utilise these tools and how innovative they are in using these tools to enhance their performance and OpEx.
- Assessing the impact of user interfaces on the adoption and use of digital internal communication tools, especially in strata of the staff where computer literacy may be low.
- Developing a method to identify digital communication tools that will fit in with an organisation's culture and requirements to lower the barrier of acceptance.
- Studying the use and implications of Artificial Intelligence on digital communication and assessing how Artificial Intelligence can be harnessed to improve data collection, analysis, and dissemination to allow for real-time decision-making and increased OpEx.

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APPENDIX A: ETHICS CLEARANCE CERTIFICATE

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School

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

Ethics Clearance Certificate

Ethics protocol number: WBS/D82645771/250
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).

Project title	The use of digital internal communication for operational excellence: A Case Study of African Rainbow Minerals (ARM)
Investigator / Researcher	Mrs Mologadi Maloka
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed confidentialty.
Issue Date of Certificate	2023-08-29
Expiry date	Date of submission of the project / research report
Chairperson	Dr Pius Oba ☎ +27 11 717 3976 +27 82 733 6587 ✉ pius.oba@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

31 August 2023
Date:

APPENDIX B: LETTER OF CONSENT



University of the Witwatersrand,
Faculty of Commerce, Law and Management at the University of the Witwatersrand
Tel: 011 717 3145

Mr. Phillip Tobias
African Rainbow Minerals (ARM)
ARM House
29 Impala Road
Chislehurston
Sandton
2146

22 June 2023

Dear Sir,

Re: Permission to conduct research at African Rainbow Minerals (ARM)

My name is Mologadi Betty Maloka. I am an employee of ARM, currently employed as Senior Manager: Communication, Brand and Media Management.

I am studying for a degree of Master of Management in the field of Digital Business, Faculty of Commerce, Law and Management at the University of the Witwatersrand. I am seeking permission to do research at African Rainbow Minerals (ARM).

I am conducting research on contemporary methods of digital communication, how they influence information sharing across tiers of a company's hierarchy, employees' perspectives on the digital communication tools they use and how they use them are studied to gain insight into the internal communication process and operational excellence. My research topic is "The use of digital internal communication for operational Excellence: A Case Study of ARM".

The research will entail collecting data from employees of ARM: the executive management, line management and operational/admin staff.

I request permission to get access to employees and conduct interviews related to the study.

APPENDIX C: PARTICIPATION INFORMATION SHEET (PIS) AND PARTICIPANT CONSENT FORM



University of the Witwatersrand,
Faculty of Commerce, Law and Management at the University of the Witwatersrand
Tel: 011 717 3145

Dear Sir / Madam

Participant Information Sheet (PIS)

My name is Mologadi Maloka. I am studying for a degree of Master of Management in the field of Digital Business, Faculty of Commerce, Law and Management at the University of the Witwatersrand. My supervisor is Prof. Nixon Ochara I am conducting a research study about how employees in African Rainbow Minerals can enhance digital communication practices to increase operational efficiency at African Rainbow Minerals (ARM). The study title is Adoption of digital internal communication for operational Excellence: A Case Study of ARM."

I am inviting you to take part in an interview/focus group. If you decide to take part, your participation in this research study will last about 20 Minutes. The interview/research activity will take place at ARM Corporate Offices, 29 Impala Road, Sandton.

With your permission, I would like to audio/video record the interview/focus group. This data will be deleted after 5 years. Only the researcher will have access to the data.

During the research activity, I will need to ask for some personal information about you, including some of your observations and experience.

The interview will be confidential and anonymous. When I share the results of the research study, I will not include your name or anything else that could identify you. With your permission, other researchers may use the data collected from this research study, but your name and any personal information will not be used or passed on. This data will be collected for study purposes.

If you decide to take part in the research study, it should be because you want to volunteer. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to. You will not get any direct benefits if you choose to join the research study. You

will not lose any services, benefits or rights you would normally have if you decided not to join. Taking part in the research study will not cost you anything. You will not be paid for being in this research study.

The risks for this research study are no more than what happens in everyday life / some of the questions asked may make you feel sad or upset. If this happens, I will stop the interview and continue another time. If you need some support or counselling services following the interview, these are available free of charge at University of Witwatersrand, and I can also arrange at ARM.

This research study will be written up as a research report. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Yours sincerely,
Mologadi Maloka

Researcher:
Mologadi Maloka, email: 2645771@sudents.wits.ac.za, Mobile: 082 259 7035

Supervisor:
Prof. Nixon Ochara, email: Nixon.ochara@wits.ac.za, Tel: 011 717 3543

University of the Witwatersrand,
Faculty of Commerce, Law and Management at the University of the Witwatersrand
Tel: 011 717 3145

Title of project: The use of digital internal communication for operational Excellence: "A Case Study of ARM"

Name of researcher: Mologadi Betty Maloka

I, ……, agree to participate in this research project.

I agree to the following:

(Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
I understand that I can volunteer to take part in the study	YES	NO
I agree that the interview may be audio or video recorded.	YES	NO
I agree that direct quotations from my interview may be used by the researcher in their research report.	YES	NO
I agree that my participation will remain anonymous (my name or other identifying data will not be used by the researcher in their research report.	YES	NO
I agree that other researchers may use the information I provide in my interview/focus group (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on.	YES	NO

…… (signature)
…… (name of participant)
…… (date)

…… (signature)
…… (name of researcher)
…… (date)

APPENDIX D: RESEARCH GUIDE FOR INTERVIEW QUESTIONS

Research Guide Interview Questions

Topic: The use of internal digital communication for operational excellence – a case study of ARM"

Participants - three levels: executives, line management and operations

Introduction:

Thank you for participating in this interview. The purpose of this interview is to understand your perspectives and experiences related to the use of digital internal communication for operational excellence. Your input will be valuable in helping us identify the challenges and opportunities for improving internal communication within the organisation. The interview should take approximately [15] minutes. Please feel free to provide detailed responses, and if there's anything you'd like to add, please do so.

Confidentiality:

All information shared during this interview will be kept confidential and used for research purposes only. Your identity will remain anonymous, and data will be aggregated to ensure privacy.

Objective 1 – Employee Engagement

1. Current internal communication practices:

a. How does the company currently communicate important information, updates, and announcements to employees?

b. What digital communication tools are being utilised, if any, for internal communication within your team or department?

2. Limitations with traditional communication methods:

a. In your opinion, what are some limitations of traditional (non-digital) internal communication methods?

b. How do these limitations impact operational efficiency and employee productivity?

4. Awareness of digital communication tools:

a. Are you aware of any digital communication tools or platforms available for internal use within the organisation? Examples: Intranet, Email- Newsflash, MS Teams Collaboration.

b. Have you personally used any of these tools, and if yes, how often and for what purposes?

Objective 2 – Employee Effectiveness

5. Benefits of digital internal communication:

a. Benefits such as improved collaboration, faster access to information, streamlined workflows, etc. How do you think these benefits would impact the overall efficiency and productivity of employees?

Objective 3 – Operational Excellence

a. From your experience and observations, in what specific ways do digital platforms contribute to achieving operational excellence at African Rainbow Minerals?

b. How do you think these tools could further contribute to operational excellence within your area of work?

Objective 4 – Existing Barriers

6. Challenges to use:

a. In your opinion, what are the main challenges that delay the use of digital internal communication tools within the organisation?

b. Can you provide specific examples or instances where these challenges have affected the use process?

7. Technical challenges:

a. Are there any technical challenges that impact of the use of digital internal communication tools? For example, where you don't have electronics or technological support like computer or laptop, etc.?

b. What specific technical challenges, such as compatibility issues or infrastructure limitations, have you encountered?

8 Resistance to change:

a. Have you observed any resistance to change among employees regarding the use of digital internal communication tools? If yes, what are the common reasons for this resistance?

b. How does this resistance impact the use of these tools?

9. Training and support gaps:

a. Are there any training or skills gaps that prevent employees from fully utilising digital internal communication tools? For example, digital literacy, lack of training?

b. What type of training or support would be beneficial to address these gaps and encourage the use of digital internal communication platforms?

10. Cultural and organisational challenges:

a. Are there any cultural or organisational factors that pose a challenge to the use of digital internal communication tools? If yes, please explain.

b. How do these cultural or organisational challenges affect the willingness of employees to embrace these tools?

11. Communication and information security:

a. Do you have any communication and information security trust concerns that impact your use of digital internal communication tools? For example: POPIA, Cybersecurity

b. How can the organisation address these concerns to enhance trust and confidence in using these tools?

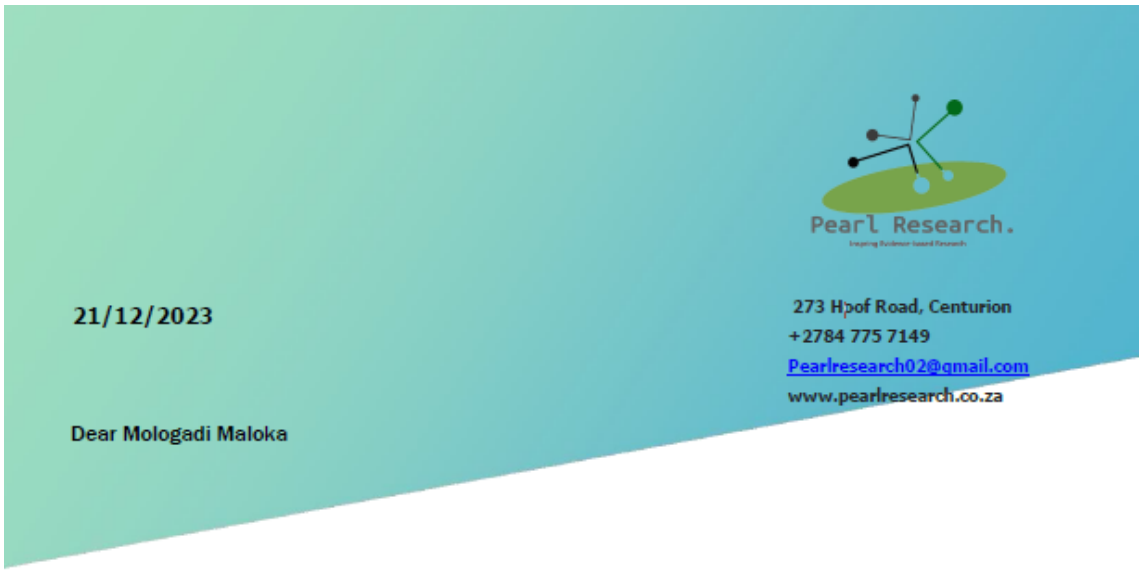
12. Recommendations for overcoming the barriers and improving the use of tools and increasing operational efficiency:

a. Based on your experience and insights, what recommendations would you propose to overcome the challenge to use digital internal communication tools?

b. How can the organisation create a conducive environment that supports the successful use of these tools?

-End-

APPENDIX E: ACKNOWLEDGEMENT OF TRANSCRIPTION



Pearl Research.

273 Hpof Road, Centurion
+2784 775 7149
Pearlresearch02@gmail.com
www.pearlresearch.co.za

21/12/2023

Dear Mologadi Maloka

Subject: Confirmation of Transcription Services for Research Study

I hope this letter finds you well. We are writing to confirm that Pearl Research South Africa has successfully transcribed the data collected for your esteemed research study.

Our team diligently worked to accurately transcribe the data in accordance with the specifications outlined by you. We understand the critical importance of precise transcription in academic research, and we are committed to upholding the highest standards of quality and professionalism in our services.

The transcription process adhered to strict confidentiality protocols to ensure the security and privacy of your research data. Additionally, our team employed rigorous quality control measures to guarantee the accuracy and reliability of the transcribed content.

Please consider this letter as formal confirmation that the transcription of your research study data has been completed to your satisfaction. Should you require any further assistance or have any questions regarding the transcription process, please do not hesitate to contact us.

We value our partnership and look forward to serving you in any future research endeavours.

Yours sincerely,

A. Masimbi
Senior Editor
Pearl Research South Africa

APPENDIX F: ACKNOWLEDGEMENT OF EDITING SERVICES

23·February·2024¶

Attention:·Prof.·Nixon·Ochara¶

University·of·the·Witwatersrand¶

Faculty·of·Commerce,·Law,·and·Management¶

¶

Dear·Prof.·Ochara,¶

RE:·CERTIFICATE·OF·LANGUAGE·EDITING¶

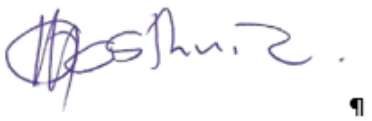
I,·Marita·(Ariel)·Oosthuizen,·hereby·confirm·that·I·edited·the·following·document:¶

"The·use·of·digital·internal·communication·for·operational·excellence:·A·case·study·of·African·Rainbow·Minerals·(ARM)"¶

This·document·was·submitted·to·me·by·Ms.·Mologadi·Betty·Maloka·on·15·February·2024.¶

¶

Kind·regards,¶



¶

_____¶

MARITA·(ARIEL)·OOSTHUIZEN¶

Cell:·082°378·4903¶