Gordon Institute of Business Science
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# Evolving Dynamic Capabilities: Microfoundations in Digital Servitisation

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# Abstract

This study explored the microfoundations of dynamic capabilities, focusing on their role in transitioning from servitisation to digital servitisation in five South African sectors: Financial Services, Telecommunications, Professional Services, Technology Enablement Services and Manufacturing. Using a qualitative approach and semi-structured interviews with 13 senior decision-makers, the study explores how ecosystem dynamics, organisational capabilities and contextual factors influence this transition.

The findings highlight the importance of linking technology projects to strategic objectives, promoting initiative and flexibility and adapting performance indicators to sectoral challenges and enablers. The research contributes to theory by a deeper understanding of the dynamic capabilities framework and presenting nuanced themes such as the societal impact of technology and the strategic role of cybersecurity. It extends and contributes to knowledge by showing how microfoundations' interdependencies support innovation and organisational resilience.

To enable a methodological understanding of digital servitisation, a conceptual framework was created that integrates contextual factors, technology considerations and performance elements for microfoundations of digital servitisation. The study provides practical recommendations for improving stakeholder engagement, organisational agility and value realisation in digital transformation projects.

**Keywords:**

Digital servitisation, dynamic capabilities, microfoundations, digital transformation

# Declaration

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

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Name & Surname Signature

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# List of acronyms and abbreviations

| | |
|---|---|
| AI | Artificial Intelligence |
| BCG | Boston Consulting Group |
| BMI | business model innovation |
| CIOs | chief information officers |
| DCs | dynamic capabilities |
| DS | digital servitisation |
| EY | Ernst & Young |
| IoT | Internet of Things |
| IT | information technology |
| MDS | microfoundations for digital servitisation |
| ROA | return on assets |
| ROI | return on investment |
| SaaS | software as a service |
| WEF | World Economic Forum |

# CHAPTER 1: INTRODUCTION

## 1.1 Background to the Research Problem: Business Relevance

Digital transformation is reshaping the global economy, compelling organisations to adopt new technologies and strategies to remain competitive and adaptable (McKinsey & Company, 2024a). Between 2018 and 2022, the global internet population grew by 1.5 billion, with more than 60% of the global GDP in 2022 relying on digital technologies (World Economic Forum [WEF], 2023). The COVID-19 pandemic accelerated this shift, forcing companies to rethink their strategies and adopt digital tools to recover and adapt to challenges (WEF, 2022). During this time, digital solution adoption by large companies tripled from 20% to 60%, while usage among micro-enterprises doubled from 10% to 20% (World Bank Group [WBG], 2023).

Despite this progress, many organisations struggle to achieve the desired outcomes from their digital investments. McKinsey's recent study reported that “89% of large companies pursuing digital transformation achieved only 31% of expected revenue growth and 25% of projected cost savings” (McKinsey & Company, 2024). This disconnect highlights a critical gap: organisations must adopt more targeted approaches to align technology investments with strategic goals. Deloitte’s analysis of over 4,000 companies underscores the value of alignment, revealing that Fortune 500 companies could unlock $1.25 trillion in additional value through improved execution. Conversely, inadequate execution risks losses exceeding $1.5 trillion (Deloitte, 2023).

The ICT sector exemplifies the transformative potential of digital tools. In 2022, the sector contributed $6.1 trillion to the global economy, accounting for 6% of global GDP. IT services alone created jobs at seven times the overall employment growth rate and doubled adoption in high-income countries. Furthermore, IT services exports grew by 12% annually between 2010 and 2022, making it the fastest-growing export category globally (WBG, 2023). These trends demonstrate that when implemented effectively, digital transformation can drive innovation and economic growth.

To thrive in this dynamic environment, organisations must not only modernise their processes but also reinvent how they deliver value to customers (Institute of Business Management [IBM], 2024). Leveraging advanced technologies like AI and automation can enhance operational efficiency and unlock new revenue streams. Simultaneously, organisations need to cultivate innovation capabilities to address disruptions and adapt to the shorter lifespans of business models (Boston Consulting Group [BCG], n.d.).

These efforts are essential for fostering resilience, sustaining competitiveness, and driving growth in an interconnected world (Ernst & Young [EY], 2022).

Achieving successful digital transformation requires an agile strategy that aligns with stakeholder goals, promotes continuous innovation, and ensures the efficient use of investments to create long-term value (Accenture, 2024). Collaborative business ecosystems, where organisations work together to create shared value, are a critical enabler of this transformation. Such ecosystems expand networks, foster partnerships, and build competitive momentum (PricewaterhouseCoopers [PwC], 2024). According to PwC's June 2024 Pulse Survey, 76% of executives believe that organisations must embrace change to survive the next decade, underscoring the urgency for transformation.

However, significant challenges remain. The biggest hurdles organisations face are cybersecurity threats, legacy technology integration, and talent management. To succeed, businesses must address these challenges by enhancing digital literacy, fostering a culture of innovation, and modernising their technological infrastructure (Economist Intelligence, 2024).

Digital transformation outcomes are often measured by customer growth, revenue increases, and cost control. Pioneering organisations consistently outperform laggards, achieving higher customer growth, increased revenues, and reduced costs (Harvard Business Review, 2023). Tailored workforce training programs have demonstrated remarkable results, including a 70% productivity boost, a 10% reduction in time-to-market, and a 50% improvement in efficiency (WEF, 2024). These findings highlight the enduring value of investing in people and technology to achieve measurable success.

Failure to adapt to digital transformation poses significant risks. With over 60% of global GDP now dependent on digital technologies, organisations that fail to innovate risk losing relevance, competitiveness, and growth opportunities (WEF, 2023). Addressing these challenges through innovation, collaboration, and strategic investments is essential for securing long-term viability in the digital economy.

### 1.2 The Research Problem: Theoretical Relevance

The role of dynamic capabilities (DCs) and their underlying microfoundations remains underexplored, particularly in the transition from servitisation to digital servitisation. This research gap is especially critical across different sectors and country contexts, where organisations encounter distinct challenges and opportunities in implementing these capabilities (Chirumalla et al., 2023). Dynamic capabilities, defined as an organisation's capacity to adapt to changing environments and reallocate resources effectively, provide

a critical lens for examining how firms navigate the transition to digital servitisation (Teece, 2007). Despite their importance, current literature often examines servitisation and digital servitisation as separate phenomena, neglecting their interrelation (Chirumalla et al., 2023). This disconnect leaves significant questions unanswered, such as which dynamic capabilities and microfoundations are crucial for enabling the transition to digital servitisation and how organisations can overcome associated challenges while leveraging key enablers (Teece, 2007).

The three core dynamic capabilities—sensing, seizing, and transforming provide a framework for recognising opportunities, reconfiguring resources, and driving innovation (Teece, 2007). These capabilities enable organisations to navigate dynamic environments and move beyond outdated practices (Suddaby et al., 2020). The dynamic capabilities framework incorporates microfoundations—detailed processes and techniques that operationalise these theoretical constructs (Teece, 2007). This framework interweaves dynamic capabilities with strategic management, offering a structured approach to organisational renewal and resource alignment (Teece, 2007).

Dynamic capabilities are necessary for meeting evolving market demands by driving change and renewing value propositions (Bocken & Geradts, 2020). They are particularly crucial in a global environment characterised by rapid and unpredictable transformation (Pitelis & Wang, 2019). Business model innovation (BMI), a multi-dimensional process, extends beyond creating new business models to reinvent existing ones to meet shifting market conditions (Bocken & Geradts, 2020). Frank et al. (2019) emphasise that dynamic capabilities are essential for managing the uncertainties and complexities inherent in integrating these dimensions.

Despite the widespread adoption of digital technologies, the rationale behind digital servitisation strategies remains unclear (Coreynen et al., 2020). Paiola and Gebauer (2020) argue that digital servitisation is driven by business model innovation, indicating the shift from traditional to digital strategies. Chirumalla et al.'s (2023) systematic literature review identifies significant gaps in understanding the microfoundations of dynamic capabilities within business model innovation. This review highlights the pressing need for further research within specific country and industry contexts to explore how these microfoundations operate and support organisations transitioning from servitisation to digital servitisation. Frank et al. (2019) assert that dynamic capabilities are indispensable for orchestrating the integration of digital technologies, addressing complexities, and navigating uncertainties associated with this strategic shift.

### 1.3 Research Questions

The research questions for this study were derived directly from gaps identified in the literature. Chirumalla et al. (2023) highlighted the need for deeper insights into the microfoundations of DCs for digital servitisation. Their work called for further research to explore how these microfoundations influenced organisational transitions and performance, particularly within different sector and country contexts.

The first research question explores the “dynamic relationship between firm characteristics, contextual factors and the key challenges and factors influencing the transition to digital servitisation” (Chirumalla et al., 2023, p12). It examines how internal factors, such as organisational readiness and digital capabilities, interact with external factors, such as ecosystem collaboration and market dynamics, to influence this transition. The question also examines the mechanisms by which challenges hinder or enable the transition to digital servitisation. This research is essential to understand how organisations can manage the complexity of digital servitisation and remain competitive in a rapidly evolving landscape. This research contributes to understanding how organisations can manage the complexity of digital servitisation and remain competitive in a rapidly evolving landscape.

Research Question 1:
"What is the relationship between firm characteristics, contextual factors for digital servitisation and key challenges and enabling factors for the transition to digital servitisation?" (Chirumalla et al., 2023, p. 12). (Frank et al., 2019 ; Kohtamäki et al., 2020 ; Baines et al., 2022 ; Coreynen et al., 2020)

- Research sub-question 1: “What are the internal and external factors?”
- Research sub-question 2: “What is the relationship between internal and external factors?”
- Research sub-question 3: “What are the key challenges and enablers of digital servitisation transition?”
- Research sub-question 4: “How do the key enablers influence the digital servitisation transition process?”

The second research question examines the interdependencies between different microfoundations and their impact on the performance of digital servitisation. It examines how combinations of microfoundations, such as technology, organisational capabilities and ecosystem partnerships, influence organisational outcomes, including operational

efficiency, innovation and customer value. It also examines how these interdependencies influence short-term and sustainable performance outcomes in different organisational contexts and maturity levels. The sub-questions further divide this investigation into focused areas that enable a deeper exploration of the dynamics driving digital servitisation performance.

Research Question 2:
"What are the interdependencies between the different microfoundations? How do they affect the performance of digital servitisation? How does the combination of certain microfoundations affect the performance of digital servitisation?" (Chirumalla et al., 2023, p. 11). (Frank et al., 2019; Wilden et al., 2019; Kohtamäki et al., 2020; Sousa-Zomer et al., 2020; Favoretto et al., 2022)

- Research sub-question 1: “How do the internal and external factors influence performance?”
- Research sub-question 2: “How does the combination of the factors impact digital servitisation transitioning?”
- Research sub-question 3: “How does digital servitisation influence organisational performance?”

The research questions are further discussed in Chapter 3.

### 1.4 Research Aims

The first aim of the research is to gain a deeper theoretical understanding of the relationship between contextual factors and organisational interdependencies and the impact of these factors on the transition to digital services. To better understand how internal and external factors affect the challenges and opportunities of digital servitisation, this study aims to contribute to the existing literature by exploring the dynamic capabilities of microfoundations of seizing.

The second research aim was to use the findings to develop a conceptual framework that focuses on the key constructs and themes of microfoundations and provides a novel perspective on how organisations can effectively manage digital servitisation.

## 1.5 Research Contribution

### *1.5.1 Business Relevance*

This research contributes to business practice by offering actionable insights for aligning technologies, fostering stakeholder engagement, and enhancing organisational agility in digital transformation strategies. First, aligning new technologies, organisational readiness and tailored cybersecurity strategies with business objectives is critical to building resilience and trust inside and outside the organisation. Secondly, stakeholder engagement is critical to developing customer-centric strategies that drive innovation and improve market positioning. Finally, developing agile organisational capabilities and industry-specific performance metrics should be foundational to drive and enable the assessment and measurement of digital transformation undertakings that align with strategic objectives and deliver outcome-based results.

### *1.5.2 Theoretical Relevance*

This study contributes to the theoretical understanding of microfoundations in the dynamic capabilities framework by showing how interdependencies and context influence digital servitisation in different industry sectors. It contributes to previously under-researched areas in the literature and provides new insights into how contextual factors such as market conditions, technological readiness and organisational support influence the performance of microfoundations and the transition to digital servitisation.

The conceptual framework developed in this study integrates dynamic capabilities, contextual factors and performance metrics and provides a novel, systematic approach to understanding microfoundations for digital servitisation. The framework bridges theoretical gaps and provides actionable insights into managing and enabling transitions to digital servitisation by presenting interdependencies as a critical element.

## 1.6 Scope of the Research

The theoretical framework of this study focuses on the microfoundations of dynamic capabilities within digital servitisation and examines how internal and external organisational factors influence the transition process. The study explores the interrelationships between these factors and their impact on contextual challenges, enablers, decision making and performance through a comprehensive literature review. A key focus is on the interdependencies between these elements, which provide a dynamic perspective on how organisations manage digital transformation.

The research covers five sectors in South Africa: Financial Services, Telecommunications, Technology Development, Professional Services and Manufacturing. These sectors were selected using purposive sampling to represent different organisational contexts and to include companies that are actively undergoing or have already undergone digital transformation. This approach broadens the understanding of digital servitisation by including insights from a different market perspective, unlike Chirumalla et al. (2023) who focused on manufacturing in a developed market. Chirumalla also posed further research questions to investigate different sectors. By examining multiple sectors and adopting a country-specific perspective, this study contributes to a deeper understanding of the challenges and enablers of digital servitisation in different economic and sectoral contexts.

### 1.7 Research Report Overview

This section provides a roadmap of the research report by describing the structure and purpose of the individual chapters and their contribution to the overall study.

This research report consists of seven chapters, each addressing specific aspects of the study and intended to help answer the research questions. Chapter 1 introduces the business and the theoretical problem and sets out the study's background, purpose, and justification. Chapter 2 critically analyses the relevant academic literature, identifies the key themes and constructs and develops the study's conceptual framework. Chapter 3 presents the two main research questions and sub-questions and links them to the study's aims.

The research design is described in Chapter 4, together with a detailed justification of the methodology, data collection techniques and analysis strategies. The research findings are presented in chapter 5. Chapter 6 emphasises the similarities and differences between the findings and the current academic literature. The study concludes in Chapter 7, summarises the research questions, presents the amended conceptual framework, discusses theoretical limitations and practical recommendations for the organisation and provides suggestions for future research.

This structured approach ensures a comprehensive examination of the research problem and combines theoretical constructs with practical implications to advance understanding in digital servitisation.

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Roadmap

The literature review thoroughly examines the theoretical and empirical foundations relevant to the research question and sub-questions.

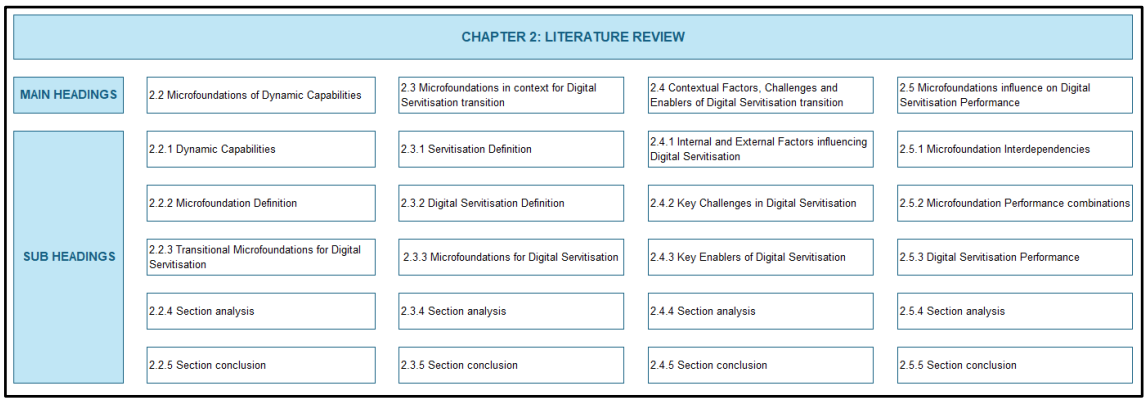


**Figure 2.1: Literature Review**

In today's rapidly changing digital landscape, organisations find themselves in a turbulent operating environment that requires creative transformation supported and guided by theoretical and practical adaptability frameworks. Understanding the interactions between digital servitisation, microfoundations, and dynamic capabilities is critical to managing complexity and achieving short-term sustainable organisational change. This chapter systematically analyses the literature. It is organised into four primary constructs that serve as the basis for this research: *Microfoundations of Dynamic Capabilities, Microfoundations in the Context of Digital Servitisation, Contextual Factors, Challenges, and Enablers, and Microfoundations' Influence on Digital Servitisation Performance*.

The chapter begins with an analysis of the microfoundations of dynamic capabilities and shows how companies recognise, seize and transform opportunities to become more agile and competitive. It then addresses the topic of the microfoundations of digital servitisation and how these contribute to the transition from product-based to service-based models. This is followed by an analysis of contextual factors, challenges and enablers, examining the internal and external forces that influence the outcomes of digital servitisation. The chapter concludes with the influence of microfoundations on digital servitisation performance. It examines how the interdependencies between the microfoundations affect organisational efficiency, innovation and performance evaluation.

Each construct is examined using a systematic framework that includes a literature review, a critical discussion analysis, and a section conclusion.

Chapter 2 concludes with a final summary of the literature review that provides a comprehensive conclusion and sets the context of the field for the theoretical study. A consistency matrix illustrates how this chapter's constructs and research questions are aligned to ensure coherence and clarity (Appendix B).

## 2.2 Microfoundations of Dynamic Capabilities

### *2.2.1 Dynamic Capabilities*

*Dynamic capabilities* are an essential source of sustainable competitive advantage from organisational resources, skills, practices, and processes (Pitelis et al., 2023). *Dynamic capabilities* equip organisations to sense opportunities, seize them strategically, and reconfigure their resources to sustain a competitive advantage in dynamic environments (Teece, 2007). When an organisation adapts its models and processes to the external environment, it can try to influence this environment to its advantage. The dynamic capabilities perspective explains this influencing of the environment in its favour (Pitelis et al., 2023). Earlier seminal work during the 1990s of Teece, Pisano, and Shuen recognised the elements and theoretical relationship that formed the basis of understanding how organisations respond during external shocks introduced by market dynamism and technological change (Teece, 2007). *Sensing*, *Seizing* and *Transforming* are the three general categories into which dynamic abilities fall (Pitelis et al., 2023).

Strategic management depends on using dynamic skills and personal experiences as they demonstrate how adaptable an organisation is to changing market dynamics and competitive pressures, enabling it to identify, implement, and reconfigure its resources (Kurtmollaiev, 2020). The dynamic capabilities framework assesses the performance of an organisation and all its constituents of the “ecosystem” (Teece, 2018, p. 1325).

Unlike ordinary capabilities that are more focused on operational efficiency and routine tasks, dynamic capabilities emphasise strategic adaptation and innovation (Pitelis & Wang, 2019). Identifying (sensing) is a fundamental element enabling organisations to continuously scan the business environment for changes that potentially can affect business dynamics (Helfat & Peteraf, 2015, p. 837).

Knowing how to implement (seizing) these findings (Helfat & Peteraf, 2015, p. 841) is crucial to ensure disruption strategies can be formulated and implemented for

organisational sustainability, but it requires specialised skills (Teece, 2007). Sensing opportunities (Kurtmollaiev, 2020) comprise practical activities such as using and processing data (Coreynen et al., 2020, p. 274), interpreting data to find new opportunities, and integrating digital skills into the organisation (Chirumalla et al., 2023). The urgency of seizing is amplified considering the organisational path dependence: “It takes time for business model innovation to catch up to technological possibilities, perhaps because business models are more context-dependent than technology” (Teece, 2018, p. 45).

Transforming involves reconfiguring resources and organisational processes to align with the identified opportunities (Kurtmollaiev, 2020) working processes, and decision-making (Coreynen et al., 2020, p. 267), transforming identity with partners, and legitimising ecosystem integration are examples of transforming digital service capabilities. Transformation capability (Kurtmollaiev, 2020) comprises exploitation capabilities, including the ability to develop new products, plan different scenarios, be adaptable, utilise new revenue streams, and establish the organisation as a resource (Chirumalla et al., 2023).

Not all organisations are equally effective in building and implementing dynamic capabilities. Some are better at recognising opportunities, others are better at seizing them, and others are more effective at transforming themselves (Teece, 2018).

### *2.2.2 Microfoundation Definition*

*Microfoundations* are the foundational elements underpinning the development and execution of dynamic capabilities. By combining expertise, decision-making guidelines, and management's cognitive skills, organisations can identify opportunities, exploit them, and adapt their resources to gain a competitive advantage (Teece, 2007; Pitelis et al., 2023). Understanding microfoundations is crucial as they provide the granular details that explain how dynamic capabilities are built and sustained.

*Microfoundations* are the granular elements that underpin dynamic capabilities, including routines, processes, and leadership skills *(Teece, 2007). Microfoundations* consist of specialised and organisational knowledge and frameworks, protocols, decision-making policies, and practices (Pitelis et al., 2023). Specific microfoundations like decision-making policies and organisational knowledge structures enhance capabilities (Chirumalla et al., 2023). Managers' cognitive abilities also support DCs, and perceptual, problem-solving and communication skills are key attributes (Pitelis et al., 2023). Teece

notes that “an effort is made to separate the microfoundations of dynamic capabilities from the capability itself” (Teece, 2007., p. 1321). The identification and development of microfoundations help organisations transition from ordinary to dynamic capabilities (Pitelis & Wang, 2019). This distinguishes abilities and competencies from the general dynamic capability categories and highlights interdependencies.

To better understand the nuanced elements of interdependencies and the impact of microfoundations, Helfat highlighted that managers' cognitive ability and decision-making dynamic capabilities and their impact on strategic change as a microfoundational element (Helfat & Peteraf, 2015, p. 837). Managers and leaders more successfully drive organisational transformation with skills such as objective evaluation, conceptual thinking, and foresight than those lacking these competencies (Suddaby et al., 2020, p. 533). However, no organisation is without error-free decisions, and “proclivities” are more common (Teece, 2007, p. 1333) due to a multitude of variables that affect organisational decision-making (Helfat & Peteraf, 2015).

Chirumalla identifies 22 microfoundations at the firm level that illustrate the dynamic capabilities and microfoundations that categorise their respective relationships to the applicable DCs of the explore, exploit and transform categories (Chirumalla et al., 2023, p. 6). As mentioned, ordinary abilities are routine tasks categorised as first-order skills. However, dynamic skills, categorised as higher-order skills, are necessary to exploit new opportunities (Winter, 2003, p. 994). Wilden et al. (2019, p. 44) define higher-order capabilities as capabilities “that allow firms to overcome the path dependence that led to the inimitability of the lower-order capabilities”. The general functions and ways of working are sufficient to maintain operations.
Still, new and improved working methods are needed for the transformation phase; in other words, seizing dynamic capabilities would be a better choice (Teece, 2007).
Microfoundations enable organisations to bridge theoretical insights with operational realities, particularly in navigating industry-specific challenges (Pitelis et al., 2023).

### *2.2.3 Transitional Microfoundations for Digital Servitisation*

Chirumalla provides an integrative model to identify the dynamic capabilities and associated microfoundations required for organisational transformation (Chirumalla et al., 2023, p. 9). Seizing microfoundations for digital servitisation encompass agile cocreation processes, partnership-based governance for risk mitigation, central coordination and integration, and digital platforms, each providing a critical lens for understanding organisational transformation (Chirumalla et al., 2023). These

microfoundations serve as the essential components of dynamic capabilities and provide a deep understanding of the subtleties, especially for implementing improved value propositions with newer technologies (Chirumalla et al., 2023). The effectiveness of dynamic capabilities varies significantly across industries and is influenced by contextual factors such as technological maturity and market structure (Teece, 2018; Chirumalla et al., 2023).

**2.2.3.1 Agile Cocreation**. Agile cocreation is broadly defined as an iterative process that provides an approach to identify, plan and deliver value in response to external demands in a shorter time (Melián-Alzola et al., 2020, p. 3). Previous literature identifies that “strategy, structure, process and technology” are cornerstones of organisational agility (Sousa-Zomer et al., 2020, p. 1108). This necessitates an iterative transitional approach where organisations and their employees continuously observe, perceive, and react to the environmental forces in small increments, also known as 'agile incrementalism' (Baines et al., 2020, p. 5). Identifying and acting on value delivery in the early stages of design can improve innovation and provide organisational capabilities that can fulfil the need to create value for customers, resulting in long-term organisational value (Chirumalla et al., 2023).

*Cocreation*, a strategic imperative, is a process that represents the organisation and its ability to work with stakeholders to create value (Wilden et al., 2019). Cocreation is the collaboration with buyers and sellers of products and services through joint development efforts to improve customer agility (Warner & Wäger, 2019, p. 332). The service offering, known as service provision capabilities, is where the value created in most instances is shared among the vested parties (Wilden et al., 2019).

An organisational paradigm shift is initiated in how organisations and their customers interact and exchange value through agile disciplines, where more value is placed on the service than the product (Frank et al., 2019). Organisations need an agile structure supporting collaboration and a culture of innovation and experimentation (Sousa-Zomer et al., 2020).

**2.2.3.2 Partnership Governance and Risk.** What decisions are made and how they are made is a question of *governance* (Bocken & Geradts, 2020). Organisations can strategically position themselves for success by expanding their external alliance network (Chirumalla et al., 2023), which introduces risk in decision-making due to uncertainty. The likelihood of transformation success increases when organisations

consider various options and carefully consider choices to find the best way to satisfy customer needs (Teece, 2018). However, once a company reaches a certain level of maturity, risk reduces and requires a different strategy (Frank et al., 2019). The change is necessary but also a choice for transitioning (Baines et al., 2020). Pursuing partnerships enables organisations to access specialised capabilities, foster innovation, and increase their ability to improve transformation while at the same time mitigating risk (Chirumalla et al., 2023).

*Partnership* governance is essential for the cocreation of value to ensure that the best interests are served when ideas, organisational knowledge and asset decisions are required for cocreation, which is contrary to agency theory (Teece, 2007, p. 1139). The risk and reward must be understood because the strategic benefits of cocreation in exploiting new opportunities through an ecosystem are attractive, and digital governance capabilities can enhance value and reduce the risk of uncertainty by fostering trust in partnerships (Warner & Wäger, 2019).

The decentralisation decision-making underpinning partnerships creates uncertainty and increases risk. Organisational capabilities to mitigate risk must establish clear boundaries for innovation and transformational decisions (Bocken & Geradts, 2020). Risk is further exacerbated by technology integration and governance (Favoretto et al., 2022).

**2.2.3.3 Central Coordination and Integration**. *Central coordination* is about building relationships and decision-making with stakeholders to achieve alignment across the value chain (Favoretto et al., 2022). In their supporting and enabling role, digital technologies facilitate the collection of important information and integrating products and processes, thus increasing the value of internal and external processes (Frank et al., 2019). When effectively utilised, the technological infrastructure can support the seizing microfoundation, leading to efficient and successful outcomes. It enables the centralised coordination of the external partner network through technological integration, leading to operational agility (Warner & Wäger, 2019, p. 332), a clear sign of organisational transformation (Chirumalla et al., 2023). Melián-Alzola et al. (2020) postulate that the facilitator role of management, a crucial component of organisational configuration and resource deployment, truly drives organisational success through coordination and forming partnerships. As integration is the process of capitalising on an opportunity within a partnership, it is considered a function of dynamic capabilities (Wilden et al., 2019).

**2.2.3.4 Digital Systems and Platforms**. The role of technology in the provision of new services and the need to adapt processes and products to support advanced services (Baines et al., 2020) is a journey that can be facilitated by tools and services (Frank et al., 2019). These investments enable the building of digital systems based on newer technologies that provide connectivity and integration capabilities (Frank et al., 2019), essentially building platforms that allow external network partners to join the incumbent's market (Warner & Wäger, 2019). Technology, as the foundation and the crucial element of organisational agility, enables the development of services to customers through digital services (Chirumalla et al., 2023). However, this transformation is not just about the material aspects. A culture shaped by the experience and knowledge of decision-makers influences the strategic direction and requires "digital-savvy leadership" (Sousa-Zomer et al., 2020, p. 1107). Platforms rationalise the information exchange process with stakeholders (Favoretto et al., 2022) and support the management of partners and risk mitigation.

### *2.2.4 Section Analysis*

The ability of organisations to identify, seize and change opportunities is referred to as dynamic capabilities and is essential for coping with volatile environments. Similarly, both Teece (2007) and Pitelis et al. (2023) emphasise the importance of aligning organisational resources, processes and structures with external demands to maintain competitive advantage. This orientation underpins strategic adaptability and emphasises the responsiveness required to cope with market dynamics and technological change. In contrast, Teece (2007) focuses on the theoretical underpinnings, while Pitelis and Wang (2019) distinguish between routine (first-order) and dynamic (higher-order) capabilities and emphasise the significant investment required to transition from operational efficiency to strategic innovation.

The distinction between sensing, seizing and transforming capabilities illustrates the different functional roles within dynamic capabilities. Similarly, Helfat and Peteraf (2015) identify sensing as critical to scanning the environment and recognising potential opportunities, while Teece (2018) highlights the urgency of seizing capabilities, which is about exploiting these opportunities through decisive action. Kurtmollaiev's (2020) divergent perspective emphasises the importance of reorganising resources and operational processes to seize opportunities.

The microfoundations underlying these capabilities shed light on how they were developed and implemented. Similar to Teece (2007) and Pitelis et al. (2023) and Chirumalla et al. (2023) emphasise the importance of decision-making strategies, leadership skills and organisational knowledge structures in shaping dynamic capabilities. These microfoundations act as mechanisms to transition from ordinary to dynamic capabilities, enabling organisations to go beyond routine tasks and strive for strategic innovation. However, there are differences in operationalisation: Pitelis and Wang (2019) classify microfoundations into a broad capability hierarchy, while Chirumalla et al. (2023) offer more specific examples tied to the organisational and industrial context.

Leadership and cognitive skills of managers are emphasised as prerequisites for effective microfoundations. Similarly, Suddaby et al. (2020) and Helfat and Peteraf (2015) emphasise the importance of foresight, conceptual thinking and objective evaluation for strategic decision-making. In contrast, Teece (2007) recognises the inherent biases and uncertainties in decision-making that often hinder the consistent implementation of these skills. This suggests that while leadership and governance are essential, they must also be adaptable to cope with the complexities and fluctuations of a dynamic environment.

### *2.2.5 Section Conclusion*

Dynamic capabilities that enable organisations to identify, seize and transform opportunities are central to navigating a volatile environment. The literature repeatedly emphasises their strategic importance, but views on their operationalisation differ. Teece (2007) provides foundational theoretical insights, while Pitelis et al. (2023) and Chirumalla et al. (2023) extend these by examining the microfoundations that enable the transition from routine to dynamic capabilities. Despite these contributions, gaps remain in understanding how these microfoundations adapt to specific contexts, most notably digital servitisation. This breadth of topic and diversity of perspectives highlights the need to explore further transition microfoundations that combine dynamic capabilities to organisational change.

In the next section, these microfoundations are explored in the context of digital servitisation and their practical application is examined in more detail as organisations operationalise transitions by understanding how these seizing dynamic capabilities are essential for navigating digital servitisation in different organisational contexts (Chirumalla et al., 2023).

## 2.3 Microfoundations in Context for Digital Servitisation Transition

### *2.3.1 Servitisation Definition*

The first phenomenon, servitisation, which has been researched for decades (Gebauer et al., 2021), was introduced by Vandermerwe and Rada (1988) as cited by Coreynen et al. (2020, p. 266). Servitisation is a strategic approach that enables organisations to address evolving customer needs by transitioning from product-focused to service-oriented business models (Chirumalla et al., 2023). This transition holds implications for both academic research and industry practice. This is due to its unique contextual elements, such as the transformation to compete on services rather than just products, which continuously shapes the business landscape (Baines et al., 2020).

Conceptually, servitisation represents the transition from product-oriented business models to service-orientated business models (Kowalkowski et al., 2017), driving the change from only selling products (technology push) to a results-orientated perspective (demand pull) that centres around value-added services (Frank et al., 2019). Technologies provide product organisations with the tools and infrastructure they need to offer innovative services and change their business strategies (Frank et al., 2019). As organisations embark on their digitalisation journey, they may adopt digital technologies and implement essential digital solutions to enhance operational efficiency. The introduction of essential digital tools and technologies in this first phase of servitisation paves the way for future digitalisation and its revolutionary benefits (Frank et al., 2019).

In the realm of digital servitisation, microfoundations play a pivotal role. They enable organisations to integrate digital technologies with service offerings, facilitating the transition from traditional product-based models to service-oriented models enhanced by digital capabilities. Examples include organisations utilising microfoundations to adopt digital platforms, enhance customer interactions, and innovate service delivery processes (Chirumalla et al., 2023).

### *2.3.2 Digital Servitisation Definition*

In the broadest sense, digital servitisation combines digitalisation and servitisation, which is the integration and/or increased use of technology (Gebauer et al., 2021). Digital servitisation requires service-related and digital technology skills (Chirumalla et al., 2023). It is a strategic combination of technologies, services, and processes driven through digital transformation (Gebauer et al., 2021). The transforming of business processes and customer interaction signal a shift to advanced practices entailing

comprehensive, integrated services rather than just a product focus (Frank et al., 2019), enabling organisations to shift from making one-off sales to offering increased customer value, resulting in longer-term profit margins (Bocken & Geradts, 2020).

According to Kohtamäki et al. (2020), the strategic importance of digital servitisation is characterised by the interaction and integration of servitisation with technology. This innovative transition promotes the formation of new business models (Frank et al., 2019). Organisations now have more opportunities than ever before to increase the accessibility of their goods and services because of Industry 4.0. These include services like remote monitoring and the ability to create fully autonomous product systems (Coreynen et al., 2020). In recent research, digital servitisation has accentuated the importance of digital service technologies in connection with Industry 4.0 and how this drives transformation (Kohtamäki et al., 2020). Achieving successful digital servitisation requires seamless integration of people, processes, and structures to adapt effectively to the constantly evolving technological environment (Sousa-Zomer et al., 2020).

### *2.3.3 Microfoundations for Digital Servitisation*

An organisation's use of digital technologies to enhance internal and external processes, combined with its approach to servitisation, are critical indicators of its digital servitisation maturity (Frank et al., 2019). It is essential to recognise the three levels of servitisation of replacing, adapting, and smoothing to assess an organisational level of maturity (Frank et al., 2019). Baines postulates that exploration, engagement, expansion, and exploitation are four conceptual phases that describe the organisational change process and the varying maturity stages; however, they are contingent on many factors impacting the phases (Baines et al., 2020). Organisational maturity phases can be assessed based on how well they integrate and adopt digital technologies, leverage scalability, manage system integration, and use digital workflows to enable data capture and access throughout the organisational supply chain. The transition from servitisation to digital servitisation represents a systematic organisational transformation. However, it requires integrating dynamic capabilities and microfoundations to drive innovation and adaptability (Chirumalla et al., 2023, p. 8).

### *2.3.4 Section Analysis*

Microfoundations are central in enabling organisations to shift from traditional product-based models to service-based ones complemented by digital capabilities. Similarly, Chirumalla (2023) and Gebauer (2021) highlight that these mechanisms enable the integration of digital tools and improve service delivery processes, promoting innovation

and adaptability. While Gebauer (2021) emphasises the strategic benefits of digital tools in meeting customer needs, Sousa-Zomer (2020) emphasise the challenges of aligning processes, people and structures and highlight the inherent tension between strategic potential and operational implementation.

Frameworks for assessing the organisational maturity level of digital servitisation show different perspectives. Frank et al. (2019) proposes a practical, metrics-driven model that divides maturity into the Replace, Adapt and Smooth phases, while Baines et al. (2020) conceptualises the Explore, Engage, Extend and Exploit phases. The contrasting perspectives of Baines et al. (2020) emphasise broader organisational change, whilst Frank et al. (2019) call for practical progress measurements.

The interplay of microfoundations and dynamic capabilities also impacts how mature digital servitisation is. Frank et al.'s (2019) operational-rooted perspective underscores the integration of digital workflows and scalable technologies that will improve supply chain operations and drive data-driven decisions. However, Chirumalla et al. (2023) differ by advocating a more comprehensive strategy incorporating dynamic capabilities that address industry-specific issues for sustainable innovation.

The seamless integration of people, processes and structures is essential for digital servitisation. Gebauer et al. (2021) emphasise the strategic value of digital servitisation in creating new business models, but Sousa-Zomer et al. (2020) offer a different perspective on the challenges posed by organisational resistance and technological inertia. This contrast shows that effective transition depends mainly on the ability to develop an adaptive organisational culture as it does on investment in technology.

Microfoundations play a crucial role in organisations' methodological transformation. According to Chirumalla et al. (2023), organisations can nurture innovation and adaptability by combining microfoundations with dynamic capabilities. However, Baines et al.'s (2020) contrasting view highlights that market volatility and resource scarcity are problematic and highlights the importance of theoretical models and practical solutions to improve implementation success.

### *2.3.5 Section Conclusion*

Digital servitisation redefines traditional product-based models by integrating digital tools to improve service delivery and foster innovation. Microfoundations serve as mechanisms that enable this transition, as Chirumalla et al. (2023) and Gebauer et al.

(2021) emphasise. However, the tension between strategic potential and operational challenges, such as aligning processes, people and structures, remains a significant obstacle to successful implementation. Frameworks such as those by Frank et al. (2019) and Baines et al. (2020) illustrate different approaches to maturity and highlight the balance between practical measurement and broader organisational change.

The interplay between microfoundations and dynamic capabilities is critical for sustainable innovation, as Chirumalla et al. (2023) suggest. However, challenges such as technological inertia and market volatility persist, as Sousa-Zomer et al. (2020) and Baines et al. (2020) note. These findings show that the effectiveness of digital servitisation depends as much on an adaptive organisational culture as it does on technological investment.

They provide the basis for exploring the contextual factors, challenges, and enablers critical to successful digital servitisation, which will be discussed in the next section.

## 2.4 Contextual Factors, Challenges and Enablers of Digital Servitisation Transition

### *2.4.1 Internal and External Factors Influencing Digital Servitisation*

The transition to digital servitisation requires organisations to develop new skills and adapt their organisational structures to digital requirements. Internally, this means nurturing digital skills and developing a digital-centric culture to support the transition to hybrid offerings and advanced services (Chirumalla, 2023). Integrating products, processes and technologies is critical to creating value for internal operations and customers, with digital platforms and tools playing a key role (Frank, 2019). Organisational readiness, including the reliability and performance of existing products, significantly impacts an organisation's ability to embark on the servitisation journey (Baines, 2022). In addition, complementary organisational practices and reconfiguration of value chain activities are essential to realising the full potential of digital systems (Kohtamäki et al., 2020). Transforming an organisation's identity and culture into a digital-centric mindset supports the internal alignment required for successful digital servitisation (Chirumalla, 2023).

Externally, technological turbulence and competitive intensity influence strategic decision-making for digital servitisation (Coreynen, 2020). Collaboration with ecosystem players, suppliers, partners and customers is crucial for building trust and structural embedding in the value network (Chirumalla, 2023). Building formal partnerships with

external actors beyond the traditional value chain enables organisations to access specialised skills and resources needed for digital transformation (Chirumalla, 2023). In addition, customer attraction, which is driven by demand for advanced, outcome-oriented services, and positioning in the value network, which determines an organisation's access to key markets and resources, are important external factors influencing the digital servitisation process (Baines, 2020).

### *2.4.2 Key Challenges in Digital Servitisation*

Organisations pursuing a digital servitisation strategy face numerous challenges, particularly in balancing exploitation and exploration, two dynamic capabilities that are critical to the transformation process (Coreynen et al., 2020). Balancing exploitation and exploration, two dynamic capabilities critical to the transformation process, is one of the many challenges organisations faces when pursuing a digital servitisation strategy (Coreynen et al., 2020). Exploration is about creating new knowledge through innovation and experimentation, while exploitation is about improving current offerings and processes by refining existing knowledge. As organisations typically struggle with the dynamics of this duality in a rapidly changing environment, this balance must be managed successfully (Coreynen et al., 2020).

Another challenge is overcoming organisational barriers, such as aligning internal practises and capabilities to leverage digital systems fully. Organisations need to close capability gaps, reconfigure value chains and adapt their organisational practises to fully realise the potential of digital technologies (Kohtamäki et al., 2020). The 'digitalisation paradox', where significant investments in digital technologies often fail to deliver a financial return (Kohtamäki et al., 2020) if not supported by complementary organisational practises and capabilities (Frank et al., 2019).

The effects of technological turbulence and the intensity of competition further complicate the transformation process. The rapid pace of technological progress requires organisations to adapt continuously, which often overwhelms their ability to implement and scale new capabilities (Frank et al., 2019). Companies that need to be sufficiently prepared are particularly vulnerable, as turbulence can act as both an enabler and an obstacle, depending on the maturity of their technological infrastructure (Frank et al., 2019).

Dealing with skills and cultural differences in organisations is another major challenge. Overcoming cultural inertia and shifting to a digital-centric mindset requires developing,

retaining and deploying valuable resources (Chirumalla et al., 2023). In addition, organisations often need help in fostering collaboration with ecosystem partners, particularly when it comes to ensuring the willingness of external stakeholders to share knowledge and resources (Chirumalla et al., 2023).

Contextual factors also play an important role in digital servitisation from an organisational perspective. These include external elements that affect how well organisations handle change and manage digital transformation, such as market conditions and competitive pressures (Baines et al., 2020). Despite the widespread adoption of servitisation, little research exists on the organisational change process and how contextual factors interact with dynamic capabilities to achieve successful outcomes (Baines et al., 2020).

Finally, organisations must deal with the strategic dilemma of offering innovative, high-quality solutions that may not immediately translate into higher sales. This is a key challenge for organisations that want to maintain a competitive market position while balancing profitability and customer value (Favoretto et al., 2022).

### *2.4.3 Key Enablers of Digital Servitisation*

Effective management practices and structures are crucial to support an innovative and agile mindset in organisations (Chirumalla et al., 2023). To transition from traditional to digital servitisation, organisations need to develop digital capabilities and cultivate a digital-centric organisational culture. This will enable organisations to respond effectively to market demands and technological advances, including aligned business models and robust governance structures (Chirumalla et al., 2023). Furthermore, emerging technologies and digital tools such as the Internet of Things, cloud platforms for processing power and storage, and predictive data analytics increase customer value and operational efficiency (Frank et al., 2019).

Organisational readiness is fundamentally essential for the transition process. The reliability and performance of existing products are critical enablers for organisations embarking on this journey as they ensure a robust platform for advanced services (Baines et al., 2020). This readiness also extends to leadership commitment, with substantial resource allocation and governance structures as critical enablers (Chirumalla et al., 2023). Prompt responses to customer requests are evidence of organisational agility and the ability to pivot effectively within the value chain (Wilden et al., 2019).

Collaboration and the integration of ecosystems are crucial elements in digital servitisation. Organisations must actively collaborate with external players such as suppliers, customers, and third-party software providers to gain access to specialised skills and build trust within the ecosystem (Chirumalla et al., 2023). These partnerships enable organisations to leverage external knowledge and resources while aligning business models across the ecosystem to drive scalability and operational transformation (Favoretto et al., 2022).

Integrating exploitation and exploration capabilities that leverage existing knowledge while experimenting with new ideas enables organisations to maintain operational excellence and innovate (Coreynen et al., 2020). This balance is crucial when overcoming the 'digitalisation paradox', where significant investment in digitalisation requires complementary capabilities, such as servitisation, to create value (Kohtamäki et al., 2020). Together, these enablers ensure that organisations can effectively manage the complex transition to digital servitisation, enabling them to create and sustain value in a dynamic market environment.

### *2.4.4 Section Analysis*

Internal factors emphasise developing digital skills, and a digital-centric culture is fundamental to developing hybrid offerings and advanced services (Chirumalla, 2023). Frank (2019) identifies digital platforms and tools as essential for increasing operational value and improving customer offerings. Similarly, Kohtamäki et al. (2020) highlight complementary practices and reconfiguring the value chain as critical to realising the potential of digital systems. Baines (2022) underlines the role of organisational readiness, especially product reliability, as a crucial prerequisite for transformation. On the other hand, the priorities differ between them. Technology integration is emphasised by Frank (2019) as the main driver for internal change. However, Kohtamäki et al. (2020) emphasise the importance of changing processes and practises alongside technology adoption. This distinction reflects differing views on whether success can be achieved through technological advances alone or whether a comprehensive organisational adaptation is required.

External factors highlight that collaboration with ecosystem actors, including suppliers and customers, is widely seen as crucial for embedding organisations in value networks (Chirumalla et al., 2023). Coreynen (2020) identifies competitive intensity and technological turbulence as external factors influencing strategic decisions. Baines

(2020) views market positioning and customer value as critical sourcing and competitive advantage. However, there are also opposing viewpoints. Coreynen (2020) differs by supporting external volatility management through technological readiness, whilst Baines (2020) emphasises demand-driven strategies and customer-centric positioning.

The balance between exploration and exploitation is seen as one of the biggest challenges in digital servitisation. According to Coreynen et al. (2020), exploitation maximises the current offer, while exploration promotes innovation. They also point out that organisations often need support to balance these capabilities in a changing environment. Kohtamäki et al. (2020) recognise this duality and emphasise its importance in dealing with complicated change. Kohtamäki et al. (2020) discuss the 'digitalisation paradox', where technology investments do not yield returns without complementary practices. Challenges include the role of turbulence. Frank et al. (2019) describe turbulence as both an enabler and a barrier, depending on how mature a company's technological infrastructure is. In contrast, Chirumalla et al. (2023) emphasise internal obstacles such as cultural inertia and resistance to a digital-centric mindset and highlight the interplay of external pressure and internal readiness.

The key enablers are effective management practises, governance structures and leadership commitment, which drives digital servitisation (Chirumalla, 2023; Baines, 2020). Implementing advanced digital tools, such as predictive analytics, improves operational efficiency and customer value, as Frank (2019) and Chirumalla (2023) noted. Collaboration within ecosystems facilitates access to resources and scalability, as Favoretto et al. (2022) and Chirumalla (2023) noted. However, the focus on enablers diverges. Chirumalla (2023) emphasises internal cultural change and adaptable business models as key enablers for digital servitisation. In contrast, Favoretto (2022) highlights the importance of trust within ecosystems and partnerships with external stakeholders, highlighting internal restructuring and external alliances underlining the multi-layered nature of the success of digital servitisation.

### *2.4.5 Section Conclusion*

Internal and external factors are instrumental to the success of digital servitisation, with internal readiness such as digital capabilities, culture and technology integration forming the foundation. Success depends on balancing technological advances and broader organisational adaptations (Frank, 2019; Kohtamäki et al., 2020). Externally, collaboration within ecosystems and effective market positioning bind organisations into value networks (Chirumalla et al., 2023;), even if competing priorities, such as demand-

driven strategies versus volatility management, increase complexity (Baines, 2020). Key challenges such as balancing exploration and exploitation (Coreynen, 2020) and overcoming the digitalisation paradox (Kohtamäki et al., 2020) highlight the need to balance internal readiness and external pressures. Leadership engagement, governance structures and ecosystem collaboration facilitate cultural change and scalable partnerships, underlining the multi-layered nature of digital servitisation success (Chirumalla, 2023; Favoretto et al., 2022).

These findings form the basis for examining the influence of microfoundations on digital servitisation, which is discussed in the next section.

## 2.5 Microfoundations Influence on Digital Servitisation Performance

The interdependencies between various microfoundations significantly impact organisational performance. These interdependencies are not merely theoretical but essential for practical implementation, particularly in how organisations manage capabilities in products, services, and digital technologies during the transformation to digital servitisation (Chirumalla et al., 2023). The combination of certain microfoundations can lead to improved performance (Chirumalla et al., 2023) by aligning internal processes with customer value, enhancing operational efficiency, and driving financial outcomes (Kohtamäki et al., 2020)

### *2.5.1 Microfoundations Interdependencies*

The interdependencies between the various microfoundations are a theoretical construct and a practical necessity. Even more so when we consider how organisations acquire and manage capabilities in physical products, service innovation, and digital technologies, navigating the transition to digital servitisation (Chirumalla et al., 2023). These interdependencies of technology and servitisation have varying levels, namely smoothing, adaptation, and substitution (Frank et al., 2019), with corresponding degrees of digitalisation phases of low, moderate and high (Baines et al., 2020). The stages and connections between these two trends illustrate how various configurations emerge when these levels are aligned, highlighting the intricate relationships that drive effective transformation (Frank et al., 2019). The relationship highlights the need for these two concepts to work in unison and impact financial performance positively. Service offerings, as the tangible expression of servitisation and the organisation's business model, are essential to maximise digitalisation's benefits and improve organisational performance (Kohtamäki et al., 2020).

### *2.5.2 Microfoundation Performance Combinations*

The performance of digital servitisation in integrating digital technologies is influenced by combinations of microfoundations that bridge the dual focus on internal processes and customer value. This theoretical understanding has practical implications for an organisation's transformational strategy (Frank et al., 2019). Kohtamäki points out the intricate connection between digitalisation and business financial performance and the advantages that companies experience, including higher customer satisfaction, more operational efficiency, and better financial results (Kohtamäki et al., 2020). Chirumalla does not explicitly delve into the microfoundations that influence performance. However, they highlight that the comprehensive information on the necessary dynamic capabilities and microfoundations for both servitisation and digital servitisation is essential, pointing out the overall significance of acquiring and managing skills for successful transformation (Chirumalla et al., 2023). Wilden (2019, p. 47) show that the combination of first-order dynamic capabilities of the microfoundations is a critical factor in improving organisational performance. It highlights the need to reconfigure organisational resources, adopt a digital mindset, and support digital skills, leading strategic partnerships and collaboration in the ecosystem and emphasises the need for robust governance structures (Sousa-Zomer et al., 2020).

### *2.5.3 Digital Servitisation Performance*

While digital servitisation (DS) is widely seen as a driver for improved business processes, the question of how these investments in digital transformation impact overall performance remains open and there are unresolved concerns about value realisation (Kohtamäki et al., 2020). Although studies have shown positive outcomes from digital servitisation strategies, particularly when product-focused companies transition to services and achieve measurable gains such as reduced operating costs (Favoretto et al., 2022), the short-term impact of DS on long-term performance metrics remains unclear.

The challenge of capturing the value of DS and its impact on performance arises primarily from the complexity and interdependencies of DS transformation initiatives. For example, these initiatives require a significant commitment to implementation, robust support structures and advanced skills development across the organisational supply chain (Kohtamäki et al., 2020). Kohtamäki states that the U-shaped relationship hypothesised between DS and digitalisation suggests that benefits only increase with higher levels of digitalisation. However, this model may not apply uniformly. Traditional manufacturing firms or SMEs may face different barriers, suggesting that the U-shaped

effect could vary significantly depending on sector, size and digital maturity. (Kohtamäki et al., 2020).

In addition, DS transformations have far-reaching implications for internal operations and organisational culture, requiring structural changes in how value is created and captured within the organisation (Favoretto et al., 2022). Technology investments alone will not lead to the required transformation performance. A balance between technology investment and organisational practices and capabilities is critical to realising value for the DS initiative. However, many organisations face significant barriers to developing these practices and capabilities, particularly due to skills and operational inactivity, which in turn could compromise the intended impact of DS on operational efficiency and financial performance (Kohtamäki et al., 2020).

A critical element for successful DS performance is the expansion of organisational capabilities beyond internal boundaries to include external stakeholders and ecosystem partners (Chirumalla et al., 2023). While DS increases customer engagement by fostering closer collaboration between customers and partners in design and operations, it also raises the question of whether such collaboration is consistently feasible or profitable in different industry contexts. While DS's collaborative approach with customers and ecosystem partners strengthens customer loyalty and revenue stability (Favoretto et al., 2022), achieving this synergy can prove challenging.

Chirumalla et al. (2023) emphasise the importance of reflecting the value of DS in financial reporting and performance measurement. While accurate performance metrics enable organisations to track and justify DS investments and thus promote sustainable digital transformation, however, questions remain about the appropriateness of these metrics in capturing the short and long-term contributions of DS, Kohtamäki et al. (2020) stressed that digitalisation impacts financial performance over time, as evidenced by growth in return on assets (ROA).

### *2.5.4 Section Analysis*

The interdependencies between microfoundations are central to successful digital servitisation (DS) and serve as both theoretical constructs and practical mechanisms. Like Chirumalla et al. (2023) and Frank et al. (2019), these interdependencies enable the alignment of products, services and digital capabilities, thus increasing organisational efficiency and customer value. However, there are different perspectives in the literature. Chirumalla et al. (2023) advocate for a holistic management approach, while Frank et al.

(2019) propose a phased strategy of smoothing, adaptation and substitution to manage the degree of digitalisation. These differences reflect the variability in how organisations manage the transition to digital servitisation depending on their level of maturity and the availability of resources.

A recurring theme in the literature is the integration of microfoundations to align internal processes with value. Kohtamäki et al. (2020) and Wilden et al. (2019) make a similar link between this integration and operational and financial benefits, such as greater organisational efficiency and improved customer satisfaction. However, Wilden et al. (2019) emphasise the organisational capabilities required to achieve these outcomes, while Kohtamäki et al. (2020) focus on the financial outcomes. In addition, Sousa-Zomer et al. (2020) underscored the governance structures and ecosystem collaboration as enablers.

How DS investments affect organisational performance remains unclear, especially in terms of achieving short-term and sustainable organisational benefits. Kohtamäki et al. (2020) proposes a U-shaped relationship between digitalisation and performance, but its applicability varies by sector and organisation with different levels of digital maturity. Favoretto et al. (2022) also point out that DS strategies only bring measurable benefits when optimising structural and cultural barriers.

Collaboration with ecosystem partners is another critical component of performance. According to Chirumalla et al. (2023) and Favoretto et al. (2022), it can increase the potential for stable revenue and customer loyalty. However, ecosystem maturity and alignment with internal capabilities are critical for these benefits, emphasising the need for successful internal and external integration in the value chain. Kohtamäki et al. (2020) link digitalisation to financial returns but call for more comprehensive organisational metrics to assess the broader impact of DS on the market.

### *2.5.5 Section Conclusion*

The interdependencies of microfoundations are crucial to enable digital servitisation (Chirumalla et al., 2023) and align products, services and digital capabilities to improve organisational performance (Frank et al., 2019). While holistic management approaches (Chirumalla et al., 2023) and phased strategies (Frank et al., 2019) provide complementary understandings, the variability of organisational maturity underscores the need for organisational context-specific approaches. Integrating microfoundations with internal processes and customer value leads to operational and financial benefits

(Kohtamäki et al., 2020). However, achieving these outcomes requires robust governance structures and ecosystem collaboration (Sousa-Zomer et al., 2020).

Despite these potential benefits, DS investments are hindered by structural and cultural barriers that vary depending on the organisation's maturity (Favoretto et al., 2022). Ecosystem collaboration offers stable revenue and customer loyalty but requires alignment with internal capabilities to realise its potential (Chirumalla et al., 2023).

These findings form the basis for understanding how microfoundations influence digital servitisation outcomes.

### 2.6 Conclusion

Dynamic capabilities are the ability to recognise, seize and implement opportunities. These capabilities are fundamental to the adaptability of organisations in a volatile environment. Teece (2007) emphasises that dynamic capabilities enable organisations to align their resources, processes and structures with external demands, thus preserving a competitive edge. Pitelis et al. (2023) support this by emphasising the crucial role of dynamic capabilities in sustaining performance during rapidly changing environments. Microfoundations underpin these capabilities by supporting the decision-making, leadership and knowledge structures required to transition from routine to dynamic operations (Chirumalla et al., 2023). Despite critical theoretical advances, more research is still needed to fully understand how microfoundations can be tailored to specific situations, mainly digital servitisation. This gap requires examining how microfoundations, capability seizure, and transformation interact to support organisational change and strategic innovation.

Microfoundations are central to transitioning from traditional product-based models to service-orientated approaches supported by digital capabilities. Chirumalla et al. (2023) claim that micro-foundations facilitate the integration of digital tools, fostering innovation, adaptability and improved service delivery. These mechanisms enable organisations to adapt to changing customer requirements, as Gebauer et al. (2021) point out. However, the alignment of structures, personnel and processes still needs to be improved. Misalignment leads to conflicts between strategic potential and operational realities (Sousa-Zomer et al., (2020). These findings underline the importance of an adaptive organisational culture to complement technological investments.

Frameworks for assessing the maturity of digital servitisation show different approaches to managing transformation. Frank et al. (2019) emphasise incremental, metric-driven strategies through replace-adapt-smooth phases. In contrast, Baines et al. (2020) argue favouring a more comprehensive systemic change through the explore-engage-extend-exploit phases. These contrasting perspectives illustrate the complexity of achieving servitisation maturity in different organisational contexts. Sousa-Zomer et al. (2020) emphasise that technological inertia and market volatility remain barriers to transformation. Baines et al. (2020) further argue that organisations must balance external pressures with internal readiness to ensure successful outcomes.

The contextual factors, which consist of internal and external factors, determine the success of digital servitisation. Frank (2019) emphasises that digital capabilities, a digital-centric culture and the integration of technologies form the basis for internal transformation. Kohtamäki et al. (2020) claim that sustainable success requires broader organisational adaptations and technological advances. Baines (2020) states that collaboration with ecosystem partners embeds organisations in value networks and enables strategic market positioning. Coreynen (2020) adds that competing priorities, such as demand-led strategies versus dealing with external volatility, increase the complexity of this alignment. Chirumalla (2023) emphasises that governance structures and leadership commitment are imperative to support cultural change and overcome these barriers to digital servitisation. According to Favoretto et al. (2022), trust and strategic alliances within ecosystems promote scalability and long-term sustainability.

Finally, the interdependencies between microfoundations are central to aligning products, services and digital capabilities in digital servitisation. Chirumalla et al. (2023) assert that these interdependencies provide both theoretical constructs and practical mechanisms to increase operational efficiency and customer value. Frank et al. (2019) emphasise that governance structures and ecosystem collaboration are essential for realising these benefits. Kohtamäki et al. (2020) emphasise the importance of governance structures for ensuring stability and scalability. Sousa-Zomer et al. (2020) emphasise that structural and cultural barriers shaped by organisational maturity hinder progress. Favoretto et al. (2022) claim that removing these barriers requires context-specific approaches tailored to the organisation's availability and readiness.

These findings demonstrate that dynamic capabilities, microfoundations and contextual factors are interrelated in shaping the outcomes of digital servitisation. Organisations can overcome structural barriers and leverage these mechanisms for short-term sustainable

innovation by coordinating their internal readiness and collaborating with external ecosystems. This research sets the foundation for further understanding dynamic capabilities seizing microfoundations for digital servitisation Chirumalla (2023).

The following developed conceptual framework will guide research in better understanding the theoretical topic of microfoundations for digital servitisation.

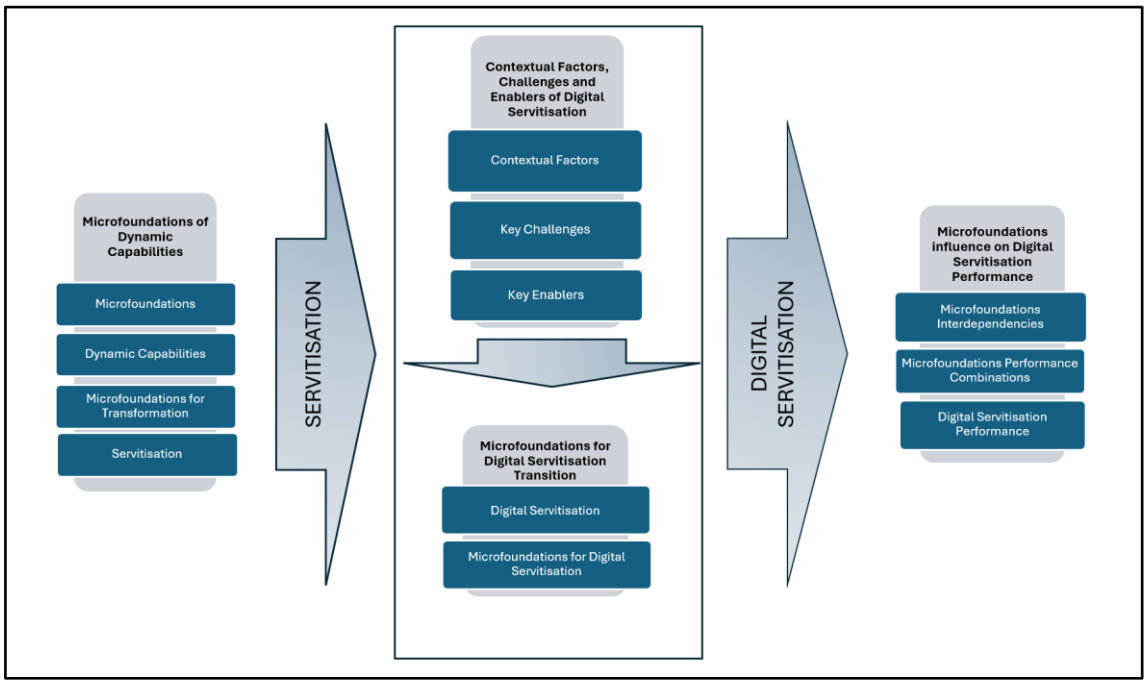


**Figure 2.2: Conceptual Framework**

Note: Author's own.

# CHAPTER 3: RESEARCH QUESTIONS

## 3.1 Introduction

This study investigated the construct of microfoundations for digital servitisation (MDS), aiming to understand the complex dynamics involved in the transition to digital servitisation.

The research focused on four main areas:

1. Contextual factors, challenges and enablers of digital servitisation.
2. Impact of the interdependencies of the microfoundations of digital servitisation.
3. The microfoundations in digital servitisation transition.
4. Microfoundations of dynamic capabilities.

## 3.2 Question 1 and Sub-questions

Research Question 1: “What is the relationship between firm characteristics, contextual factors for digital servitisation, and key challenges and enablers of digital servitisation transition?” (Chirumalla et al., 2023, p. 12)

- Sub-question 1: “What are the internal and external factors?”
- Sub-question 2: “What is the relationship between internal and external factors?”
- Sub-question 3: “What are the key challenges and enablers of digital servitisation transition?”
- Sub-question 4: “How do the key enablers influence the digital servitisation transition process?”

## 3.2 Question 2 and Sub-questions

Research Question 2: “What are the interdependencies among different microfoundations? How do they affect the performance of digital servitisation? How does the combination of certain microfoundations affect the performance of digital servitisation?” (Chirumalla et al., 2023, p. 11).

- Sub-question 1: “How do the internal and external factors influence performance?”
- Sub-question 2: “How does the combination of the factors impact digital servitisation transitioning?”

- Sub-question 3: “How does digital servitisation influence organisational performance?”

### 3.3 Research Aims

This study investigated the connections between contextual factors, organisational characteristics and the enablers and obstacles to the shift to digital servitisation. The study investigated the relationships between microfoundations and their impact on digital servitisation performance. By addressing these aims, the research provides practical insights into how organisations can effectively build and leverage dynamic capabilities and their microfoundations to achieve successful digital servitisation transformation.

### 3.4 Research Scope

This research focused on organisations that are either in the digital servitisation process or have already undergone such a transformation. Digital servitisation refers to integrating digital technologies with service offerings, transforming traditional business models to deliver enhanced value through digital services. The study explored the internal and external factors influencing digital servitisation, the challenges faced during the transition, and the key enablers that support this process. The scope included examining the microfoundations of dynamic capabilities within these organisations and analysing their impact on organisational performance. The research drew on qualitative data from semi-structured interviews with senior executives and key decision-makers across various industries, providing a broad and contextual understanding of the phenomenon.

# CHAPTER 4: METHODOLOGY

## 4.1 Research Methodology and Design

A qualitative methodology was chosen for the study because it thoroughly explores the experiences and perspectives of the participants. This approach provides a design to investigate the following research question: “What is the relationship between firm characteristics, contextual factors for digital servitisation, and key challenges and enablers of digital servitisation transition?” (Chirumalla et al., 2023, p. 12). Qualitative research captures nuanced insights for understanding the relationships central to this study (Creswell et al., 2007). The approach is particularly effective for hearing the individual's voice and exploring the richness of individual experiences through open-ended methods (Azungah, 2018; Gehman et al., 2018).

The phenomenological approach was chosen to explore participants' lived experiences and uncover patterns of meaning in specific contexts (Bell et al., 2019). However, the phenomenological approach is different to phenomenology. As a philosophical tradition, phenomenology examines the universal essence of experiences and serves as a theoretical lens rather than a practical research method (Creswell et al., 2007). The phenomenological approach applies these principles in a practical framework for collecting and analysing real-world data, prioritising individual perspectives and subjective experiences (Bell et al., 2019). This approach supports the study’s aim to explore the challenges and enablers of digital servitisation transitions by capturing participants' unique experiences in their own words (Chirumalla et al., 2023).

The study adopts an interpretivist paradigm, recognising reality's subjective and socially constructed nature (Creswell et al., 2007). Interpretivism emphasises understanding phenomena through participants’ meanings and contextual realities, making it well-aligned with the phenomenological approach (Alase, 2017). This paradigm provides a foundation for interpreting participants’ perspectives within their organisational and contextual settings, supporting the exploration of digital servitisation transitions (Creswell et al., 2007).

Social science philosophy informs the study by examining the interplay between culture, individual actions, and institutional systems (Bell et al., 2019). As a key component of this philosophy, ontology examines the nature of reality and supports exploring participants’ subjective experiences and perspectives (Creswell et al., 2007). These philosophical foundations enhance the study’s understanding of complex organisational

phenomena and contribute to a shared understanding of digital servitisation dynamics (Bell et al., 2019).

### 4.2 Research Setting

The research setting was that of organisations either undergoing or having recently undergone digital servitisation. These organisations were selected on a range of criteria such as industry, size, and stage of digital transition, ensuring a comprehensive and representative sample. Interviews were conducted within the workplace environment, either in person or through virtual means, depending on accessibility and convenience. This setting was particularly relevant to the research question as it provided a natural context in which the interplay between technological progress, market dynamics, and corporate strategies could be observed and analysed. This study aimed to explore individuals' experiences and perceptions of their organisational landscape or circumstances in a social setting (Gehman et al., 2018, p. 297). This comprehensive approach captured a broad view across different contexts and industries, providing the necessary context for exploring the research questions.

This diverse setting supports the study's aim of exploring digital servitisation across various organisational types, reflecting its objective of addressing firm characteristics and contextual factors.

### 4.3 Level and Unit of Analysis

According to Seibert et al. (2004), the level of analysis in research refers to the primary focus or unit to be analysed. The study's primary focus was the analysis at the organisational level.

As Teece (2018) points out, dynamic capabilities are central to an organisation's ability to identify and exploit opportunities while adapting to external threats. These capabilities are inherently organisational and reflect the business's collective structures and processes. Understanding microfoundations, as articulated by (Teece, 2007), provides deeper insights into the underlying mechanisms that drive the dynamic capabilities and how the organisation is coping with the challenges of digital servitisation transformation (Chirumalla et al., 2023).

The unit of analysis is the individual and focuses on senior executives with digital expertise and key decision-making roles. These executives play a central role in shaping organisational strategies and decisions, so their insights are essential for understanding the empowerment climate, i.e. the way decision-making supports freedom in their roles

(Dionne et al., 2014). Studying individuals at this level allows an in-depth exploration of how their perspectives and experiences in developing microfoundations reflected the broader organisational dynamics during the digital servitisation process.

### 4.4 Sampling Method

This study utilised purposive sampling to select participants due to the nature of access required (Bell et al., 2019, p. 112). Purposive sampling was chosen because it allowed the researcher to deliberately select individuals who have specific characteristics or experiences relevant to the research question. This method ensures that the participants, with their unique and valuable experiences, can provide rich, detailed information about their experiences with digital servitisation.

Purposive non-probability sampling was used because it facilitated the preliminary identification of participants involved across various organisational levels (Bell et al., 2019, p. 114). The value of purposive sampling was in its ability to include multiple perspectives, enabling a richer and more nuanced understanding of the phenomenon (Gehman et al., 2018, p. 294).

#### *4.4.1 Sampling Criteria*

Participants were selected based on the following criteria:

- Type of organisations: Organisations whose strategy involves digital servitisation. These organisations publicly declare digital transformation as part of their strategic goals, ensuring relevance to the research question about digital servitisation.
- Decision makers: Participants with decision-making roles in these organisations, such as executives and managers, who are currently responsible for implementing digital transformation strategies, were selected. Their insights into the strategic aspects of digital servitisation were regarded as important in enhancing the relevance and applicability of the research findings.
- Experienced individuals: Another essential criterion for participant selection was their direct experience and knowledge of digital servitisation. These individuals, particularly those in leadership roles and directly involved in digital servitisation initiatives within their organisations, could provide crucial insights into how microfoundations enable the transformation process (Chirumalla et al., 2023).

### *4.4.2 Sample Size*

The sample size for this study was initially targeting 12 to 16 participants. This sample was considered to capture a sufficient diversity of perspectives in the sectors relevant to the study, namely Financial Services, Telecommunications, Technology Enablement, Professional Services and manufacturing, see Table 4.1. A purposive sampling strategy was utilised to identify potential participant who had experience and insight into digital servitisation in their respective sector, which supported the cross-case analysis of the study. Following Groenewald's (2004, p. 46) guidance, the sample size exceeded the qualitative minimum of ten participants for one-hour interviews, creating a solid database.

The participants were selected using a matrix approach that ensured each sector was represented and the different levels of management were included. This was to gather views from different organisations, and from different levels of management within each sector. This design approach provided depth to the study and supported developing a deeper contextual understanding of digital servitisation across various sectors.

The study concluded with 13 participants interviewed, covering various sectors and providing valuable insights into digital servitisation experiences. Data saturation, which in qualitative research refers to the point at which no new themes or ideas emerge (Saunders et al., 2018, p. 1896), was closely monitored during data collection. The sectors showed recurring themes and patterns that provided a degree of data depth and supported the study's conclusions.

The analysis considered data saturation, where no further discoveries are expected to be identified (Saunders et al., 2018, p. 1901). As the qualitative interviews were interactive, the different experiences of the individual participants contributed to a greater depth of information on the topic. Reflexivity was also practised in participant selection and data collection, as the researcher reflected on their professional background and connection to the topic, which supported an objective approach to participant selection and analysis. This approach ensured that diverse perspectives were represented.

The diversity of participant perspectives across sectors supported the study's ability to answer the research questions and provided varied insights that contributed to the study's aims. The sampling approach, which focused on the diversity of sector and management levels, provided the basis for a well-rounded analysis of digital servitisation and a foundation for insights.

**Table 4.1: Participants by Sector**

| Sector | Final number of participants |
|---|---|
| Financial Services | 3 |
| Telecommunications | 3 |
| Technology Enablement | 3 |
| Professional Services | 4 |
| Manufacturing | 1 |
| **Total** | **13** |

Note. Author's own.

### *4.4.3 Access*

I used my professional network, class members and LinkedIn searches to identify and access participants in different organisations based on the sampling criteria.

## 4.5 Research Instrument

This study's primary data collection technique was semi-structured interviews (Bell et al., 2019, p. 150). In line with the interpretivist paradigm, which aims to understand each participant's unique perspectives and experiences, this method allowed the researcher to investigate participants' experiences with open-ended questions (Kallio et al., 2016). Each question in the interview protocol was designed to elicit responses that aligned with the primary research questions to ensure that the data collected contributed to the study's objectives.

The semi-structured interviews provided flexibility, enabling the researcher to employ probing questions to clarify or expand upon responses. This helped obtain deeper insights and understanding of participants' experiences without assuming or directing them toward specific answers (Bell et al., 2019, p. 83; Saunders et al., 2012, p. 378).

The interview protocol was developed based on the study's main research questions, while themes from the literature review helped craft questions focused on business-relevant, experience-based insights (Josselson, 2013). For example, questions were designed to gather detailed views on specific aspects of digital servitisation, using familiar business language and terms instead of theoretical language. Therefore, the questions were simplified and made practical and relatable to support the study's focus on participants' experiences.

The interview protocol (see Appendix A) was designed with an opening question to set the context, a small q, followed by eight main questions and sub-questions that moved from general topics to more specific inquiries, and concluded with a closing question (Josselson, 2013). This progression allowed participants to share rich, insightful responses in a comfortable, guided flow. Where the participant elaborated on experiences that were not specific to the interview questions or where the participants were brief, and more data was needed, the researcher prepared additional probing questions to clarify responses or encourage participants to expand on interview questions that were deemed appropriate. This approach supported a balanced interview process, ensuring the discussion remained open-ended.

The researcher practised reflexivity to the best of their ability during the interview process by remaining aware of their professional background and potential self-biases. This self-awareness supported the interview process and mitigated the potential influence on the participants' responses. Using this adaptable interview approach, the researcher obtained insightful information about participants' experiences of digital servitisation.

### 4.6 Data Gathering

Semi-structured interviews were conducted using the interview protocol (see Appendix A). The data gathering process aimed to gather participants' perspectives and experiences with digital transformation, exploring the microfoundations of digital servitisation. A purposive sample was used to select participants who could provide in-depth insights directly relevant to the research questions. The participants' perspectives and experiences contributed to valuable insights, enhancing the relevance and richness of the data collected (Josselson, 2013).

Participants were contacted by telephone or email, and written informed consent was obtained that ensured they understood the purpose of the study, their rights, and the necessary confidentiality protections in place (Saunders et al., 2012, p. 239). Interviews were scheduled at times convenient for participants, as flexible scheduling was essential to accommodate the participant's availability. This allowed for an engaged interview, contributing to the quality and depth of data collected (Josselson, 2013). Each participant interview lasted approximately 60 minutes and was conducted virtually or, where possible, in person.

The researcher followed systematic steps for data-gathering to maintain consistency:

### *4.6.1 Data-gathering Process*

1. Participant Identification: Identified participants who met the sampling criteria.
2. Contact Participants: Contacted participants by phone or email to initiate recruitment and confirmed availability.
3. Schedule Interviews: Confirmed suitable dates and times by sending formal invitations and consent forms.
4. Provide Context and Confirm Consent: Explained the study, answered any questions, and obtained written consent.
5. Conduct Interviews: Conducted 60-minute face-to-face or virtual sessions, depending on participant preference, and obtained verbal consent before starting the recording.
6. Transcribe Interviews: Transcribed the recordings word for word to maintain accuracy in analysis.
7. Ensure Data Security: Stored transcripts securely on password-protected devices, with access restricted to the researcher.

To maintain confidentiality, all personally identifiable information was removed during the analysis. The researcher vigilantly monitored personal bias throughout data collection to avoid influencing participants' responses, enhancing the study's credibility. Reflexivity was maintained by remaining conscious of personal and professional bias throughout the interviews, supporting an objective collection of participant narratives. By taking a reflexive approach and using direct quotes from participant interviews, the researcher strengthened the study's credibility, presenting clear examples that illustrated key findings (Bell et al., 2019).

This systematic yet flexible approach to data gathering provided a consistent process aligned with research questions, ensuring that the data collected was reliable, detailed, and reflected participants' perspectives.

## 4.7 Data Analysis

The data gathering and analysis process followed systematically supported observability and allowed for deeper insights (Saunders et al., 2012). This study used thematic analysis as a systematic and flexible approach that supports understanding complex processes such as digital servitisation (Braun & Clarke, 2021) and is consistent with the interpretivist framework of the study as it provided a structured method of exploring participants' subjective experiences and the meanings they assigned to them.

The data analysis followed the following four-step coding outlined in Figure 4.1.

1. First-order codes – descriptive and inductive

The systematic process for the data preparation allowed the researcher to become familiar with the data and identify data patterns and themes from the participants' perspectives through an interpretative approach to coding (Braun & Clarke, 2021). This initial review supported the data analysis process to maintain a standard by capturing participants' exact words while the context was still fresh in the researcher's mind (Bell et al., 2018). Personal details were removed in this step to preserve the anonymity of the participants.

To manage the data and analyse the transcriptions of the participant interviews, the researcher used Atlas.ti, a data analysis tool. Using this programme, the researcher analysed each transcript after uploading it to Atlas.ti. To create first-order codes that contained the participants' descriptive words, the coding process began with reading the transcript data, listening to the audio data, and highlighting sentences that represented units of meaning by creating quotations.

Braun and Clarke (2021) explain that coding in qualitative research is a subjective process that benefits from reflexivity, as the researcher continuously considers how their assumptions might influence the analysis (p. 40). At this stage, reflexivity was maintained by reviewing and adjusting codes as understanding deepened.

2. First-order categories – descriptive and inductive grouping

After the initial coding of all transcriptions, the researcher developed first-order categories in the second step of the analysis. Braun and Clarke (2021) state that this approach involves grouping similar codes into broader conceptual areas that provide a structured basis for subsequent analysis. This process, similar to reflexive thematic analysis (TA), where themes are generated from codes, helped the researcher recognise important patterns in the data. Using Atlas.ti, the researcher grouped similar first-order codes into these categories, creating an organised view of the data that facilitated the development of overarching themes that captured the key findings from the results.

3. The shift from descriptive to conceptual language – The conceptual leap

The next step was transitioning from the first-order categories to abstract, conceptual terms, often called the "conceptual leap". To this end, using a conceptual lens, the first-order categories were mapped to the conceptual framework established in Chapter 2. As Klag and Langley (2013, p. 150) explain, a conceptual leap in qualitative research

"involves bridging the gap between empirical data and theory" by providing deeper insights by moving from specific data details to abstract concepts.

Using the conceptual framework from Chapter 2, the researcher mapped the empirical findings to broader theoretical concepts, providing an organised perspective that addresses the research questions.

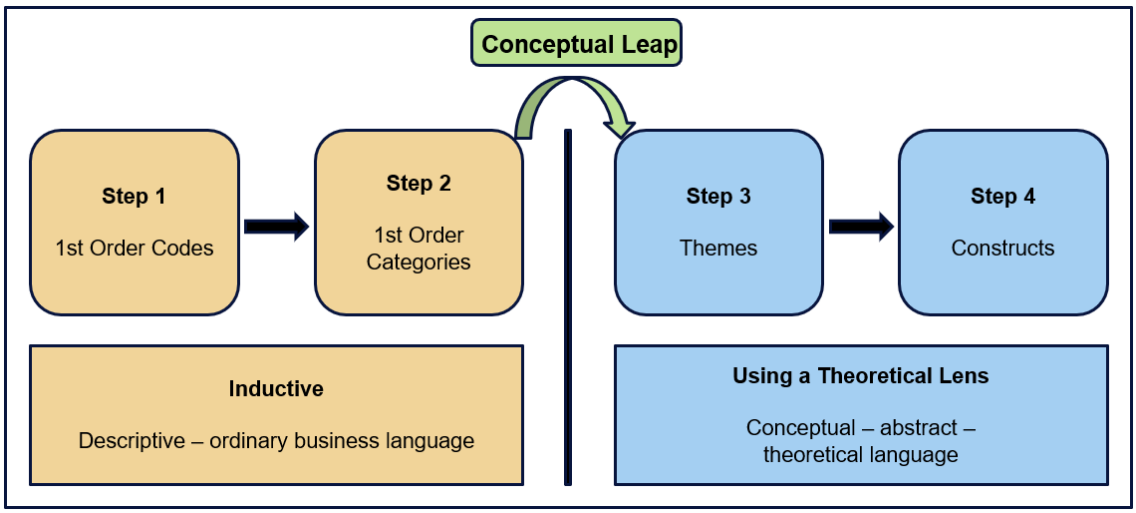


**Figure 4.1: The 4 Steps of Data Analysis**

Note: Author's own. Adapted.

4. Applying the conceptual lens

The researcher mapped the themes using guided by the conceptual framework. Using this framework as the conceptual lens, the researcher mapped the first-order categories to the conceptual framework that addressed the research questions.

Developing themes required analytical work to map different data points into coherent themes that reflected deeper meanings in participants' responses. Throughout this process, reflexivity was maintained to manage potential biases and ensure that themes represented participant perspectives rather than pre-existing assumptions. As Braun and Clarke (2021) note, themes can unite data that may initially seem unrelated, capturing underlying meaning and patterns (p. 43). Creating a structured framework for analysis helped clarify themes' meaning in qualitative research (Groenewald, 2004).

Data saturation is when no new codes appear in the data analysis (Braun & Clarke, 2013). It is unclear if the data saturation was reached after the 13 interviews. However, the number of new codes identified was diminishing, with the last interview yielding 47 new codes. While this shows that saturation was not reached, the data set demonstrated

considerable richness as 1,228 original codes were summarised into 116 first-order categories (Table 4.2). The inability to reach full saturation could not be achieved primarily due to practical time constraints that limited the possibility of conducting additional interviews. Nonetheless, the highly detailed and granular coding process resulted in a robust data set that provided meaningful insights and could be effectively analysed and interpreted.

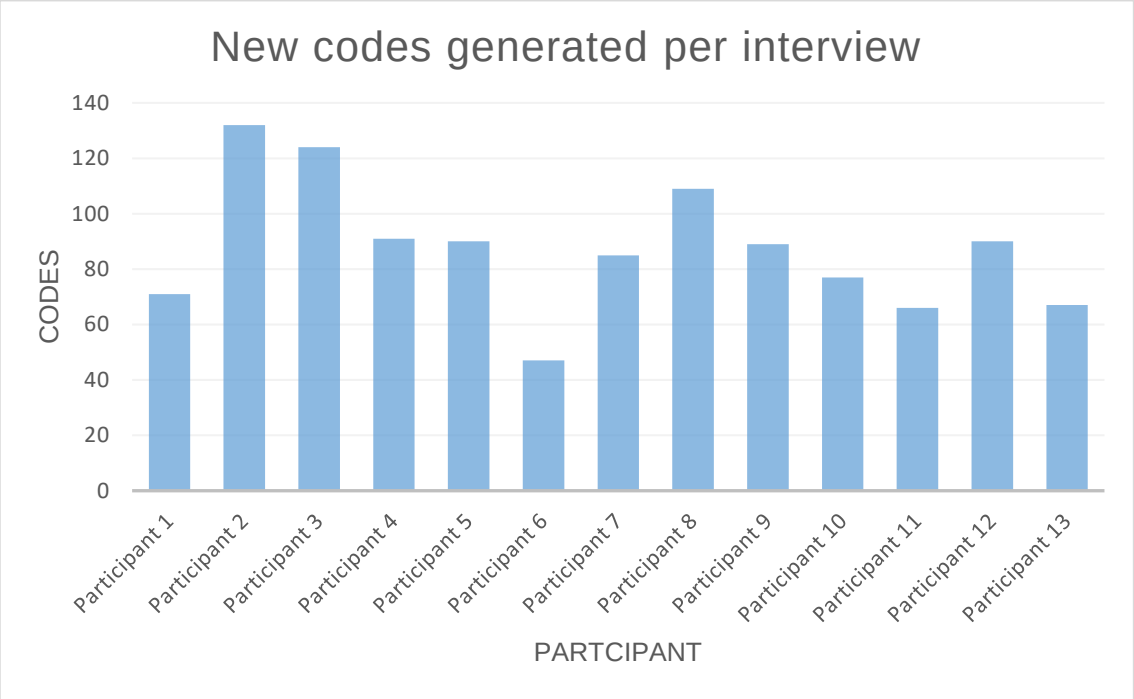


**Figure 4.2: New codes generated per interview**

Note: Author's own.

**Table 4.2: Participants by Sector**

| | | |
|---|---|---|
| Step 1 | First order codes generated | 1128 |
| Step 2 | First order categories generated | 116 |
| Step 3 | Themes and subthemes | 12 and 5 |
| Step 4 | Theoretical Constructs | 4 |

Note: Author's own.

Although complete saturation could not be established, the study provided a thorough understanding of the phenomenon by highlighting thematic repetitions and patterns. This method captures the depth and diversity required for a qualitative, interpretative study.

### 4.8 Research Quality and Rigour

Ensuring the quality and rigour of qualitative research is crucial for establishing the findings' credibility, reliability, and validity. This study employed several approaches to enhance research quality and rigour, focusing on the critical aspects of reliability and validity in qualitative research.

The data collection method, including interviews (Bell et al., 2019; Kallio et al., 2016), the interview protocol (Josselson, 2013), and data analysis (Saunders et al., 2012), supports cross-verification from various sources and improves observability. The thoroughness of the audit trail provides a sound foundation for the research and strengthens confidence in the process.

Reliability in qualitative research refers to the consistency and dependability of the research findings (Merriam & Tisdell, 2016). To enhance reliability in this study, detailed documentation of all research activities, including data collection and analysis procedures, has been maintained, providing transparency and allowing other researchers to follow the research process step-by-step. An audit trail was maintained, providing a documented process to enable transparency and demonstrate consistency in coding and analysis decisions. Using interpretative phenomenological analysis (Alase, 2017; Bell et al., 2019) incorporates reflexivity, empowering the researcher to continuously self-reflect. This approach encourages reflection and discloses potential biases and influences on the research, thereby mitigating personal biases and preconceptions. Additionally, multiple data sources, such as interviews from different organisational roles and relevant documents, were used to cross-verify and validate findings, ensuring that the results are not solely dependent on a single data source.

Validity in qualitative research refers to the accuracy and truthfulness of the findings. Thick description is essential as it provides detailed and rich representations of the research context, allowing readers to understand the context and transfer the findings to similar settings, thus improving validity and outcomes (Alase, 2017; Groenewald, 2004).

Systematic thematic analysis (Braun & Clarke, 2021; Josselson, 2013) enhances reliability by providing a consistent and replicable method for identifying and analysing patterns within the data. It offers rich insights into the participants' subjective experiences. By incorporating these strategies, the research design ensures both reliability and validity.

Triangulation of data sources, a method that involves using multiple data sources to validate findings, maintaining an audit trail, producing contextual descriptions, practising reflexivity, and ensuring the reliability and corroboration of findings, all contribute to the robustness and credibility of qualitative research. This comprehensive approach is particularly relevant to exploring the dynamic capabilities and microfoundations (Chirumalla et al., 2023) within the research setting. It provided a nuanced understanding of the transformation process through diverse and rich data insights.

### 4.9 Ethical Considerations

Ensuring ethical integrity in qualitative research was essential for protecting participants' rights and well-being. To minimise potential harm, participants in this study received sufficient information about the research purpose and procedures beforehand. They were allowed to ask questions and were informed of their right to withdraw from the study at any time. Informed consent was obtained through a signed consent form provided to the participants, which was archived. The researcher ensured confidentiality by adhering to the ethical clearance guidelines and implementing anonymity safeguards throughout data handling.

The following information is in line with the ethical clearance questions for clarity.

#### *4.9.1 Question 13*

The researcher transcribed the collected data to maintain confidentiality and ensure data security. By handling the transcription process directly, the researcher was able to closely monitor data handling and uphold participant privacy throughout.

#### *4.9.2 Question 14*

The identities of individuals or organisations will remain anonymous to protect privacy. To achieve this, personally identifiable information was redacted, or pseudonyms were used. The researcher took special care in preparing the data and reviewing the transcripts to remove or redact all potential identifiers to protect the participants' privacy, knowing that specific phrases or comments could reveal their identity. The audio and video recordings of the interviews will be deleted when the study is submitted to GIBS. After the interviews and data processing, all correspondence, including emails and digital interactions with participants, was also deleted. This research adhered to all institutionally mandated approval procedures and ethical guidelines.

#### *4.9.3 Question 15*

No particular organisation was used for the study; any organisation meeting the specified criteria and sample frame in Section 3.4 was considered suitable.

#### *4.9.4 Questions 24 and 25*

The primary data record is stored on a physical USB flash drive with a fingerprint (biometric) reader to ensure safe access and prevent password issues. No copies will be archived or backed up on any other storage medium, preventing unauthorised access. The data will be stored for ten years.

### 4.10 Limitations

The following limitations are noted.

- The research was conducted by a novice researcher.
- Limitations in participant availability due to unavailable or declined participants.
- The research focused on South African sectors and may limit the broader applicability of the findings to other regions or contexts.

# CHAPTER 5: FINDINGS

## 5.1 Presentation and Findings

The following section presents the results of the data analysis within the framework of the research methodology from Chapter 4 to answer the research questions from Chapter 3. Based on the constructs of the research questions outlined in Chapter 3, the analysis findings were categorised into 12 themes, and five new sub-themes were identified during the analysis that reflected nuances of differences. These potentially new sub-themes are represented by the colour green. Figure 5.1 illustrates the revised conceptual framework of the data analysis.

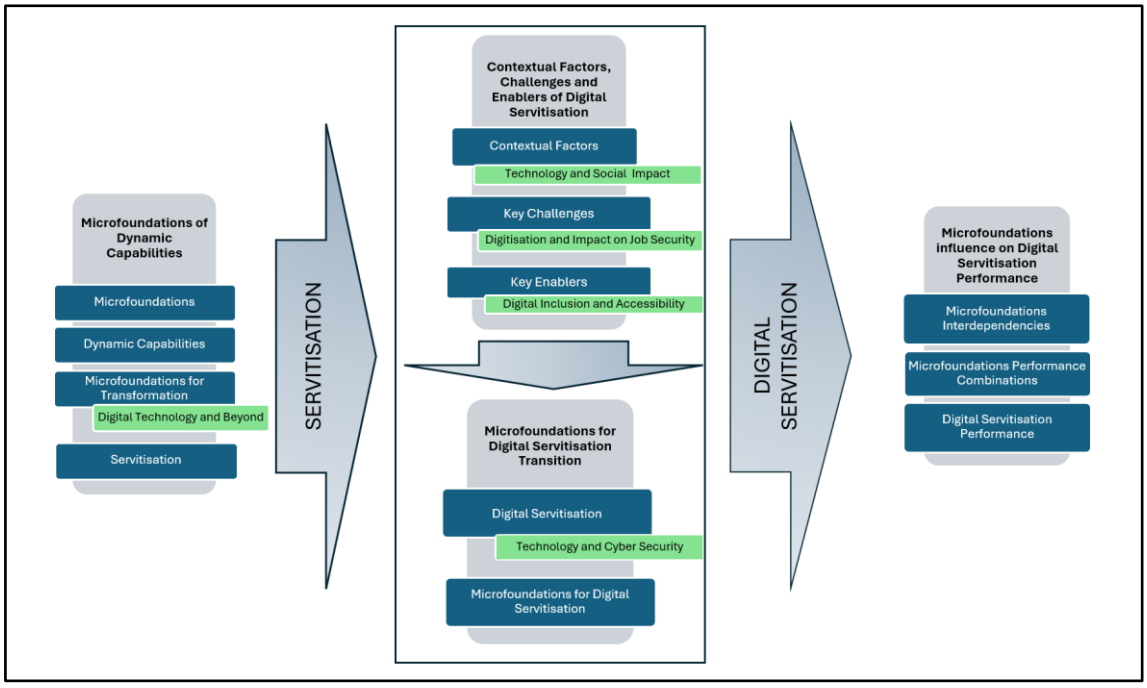


**Figure 5.1: Revised Conceptual Framework**

Note: Author's own.

The participants were drawn from a range of sectors as per Chapter 4, and Table 5.1 below provides a summary by sector group. The sectors included financial services (3 interviews), telecommunications (3 interviews), technology development (3 interviews), professional services (4 interviews) and manufacturing (1 interview), as shown in Table 5.1. To facilitate the presentation and interpretation of the results, each sector group was assigned a specific colour code: Financial Services (blue), Telecommunications (orange), Technology Development (yellow), Professional Services (pink) and Manufacturing (grey). This colour coding visually distinguished the groups and facilitated

analysis, especially in the tables with the group quotation tables where evidence and participant quotes are listed.

**Table 5.1: Sector Groups**

| Sector | Final number of participants | Participant |
|---|---|---|
| Financial Services | 3 | Participant 2<br>Participant 9<br>Participant 11 |
| Telecommunications | 3 | Participant 7<br>Participant 8<br>Participant 12 |
| Technology Enablement | 3 | Participant 3<br>Participant 6<br>Participant 10 |
| Professional Services | 4 | Participant 1<br>Participant 4<br>Participant 5 |
| Manufacturing | 1 | Participant 13 |
| **Total** | **13** | |

Note: Author's own.

Chapter 5 begins by aligning the analysis with the research questions outlined in Chapter 3. Each research question is systematically explored through the key themes, summarised at the beginning of each research question. This table presents the findings by theme, highlighting similarities and differences between sectors. Table 5.2 complements this by showing the frequency of mention of each theme, categorised as 'many', 'some' or 'few/none' to indicate the patterns across the different groups.

Each theme is systematically presented, with a brief introduction, relevant data evidence, and an in-case and cross-case analysis. This structured approach provides a consistent framework for examining the findings, allowing for a comparative view of the different sectors on topics discussed. Each theme section concludes with a discussion of the similarities and differences between the sectors.

At the end of each research question, a table presents the themes, providing a description of the themes and potential sub-themes and their differences. The chapter concludes with a final discussion summarising the findings.

### 5.2 Research Question 1

"What is the relationship between firm characteristics, contextual factors for digital servitisation, and key challenges and enablers of digital servitisation transition?" (Chirumalla et al., 2023, p. 12).

This section analyses the themes associated with research question 1, which are reflected in the revised conceptual framework (Figure 5.1). Table 5.2 illustrates the five themes and the potential new sub-themes for research question 1, followed by Table 5.3, which shows the themes, topics and frequency of mention.

**Table 5.2: RQ 1 Themes**

| Theme | Similarities | Differences |
|---|---|---|
| | Existing theme | New Sub-theme |
| Contextual Factors | X | |
| Technology and Social Impact | | X |
| Key Challenges | X | |
| Digitisation and Impact on Job Security | | X |
| Key Enablers | X | |
| Digital Servitisation | X | |
| Technology and Cyber Security | | X |
| Microfoundations for Digital Servitisation | X | |

Note: Author's own.

**Table 5.3: Themes, Topics and Frequency of Mention of RQ 1**

| | Financial Services group | Telecommunication group | Technology Enablement group | Professional Services group | Manufacturing group |
|---|---|---|---|---|---|
| Contextual Factors *Topics* | Many Technology and Societal Impact | *Many External Factors due to Digitalisation* | Some *Regulatory and Compliance Challenges* | Many *External Influences* | Few *External Influences* |
| Key Challenges *Topics* | Some *Cross-Functional Challenges* | Many *Transformation of Legacy Businesses* | *Many Technology Integration Challenges* | Some *Transformation of Legacy Businesses* | None |
| Key Enablers *Topics* | Many *Customer Experience* | Some *Financial Drivers* | *Many Customer Experience* | Some *Leadership and Technology Understanding* | Few *Financial Drivers* |

| | Financial Services group | Telecommunication group | Technology Enablement group | Professional Services group | Manufacturing group |
|---|---|---|---|---|---|
| Digital Servitisation *Topics* | Many *Strategic use of Technology* | Many *Technology Evolution and Internal Impact* | *Some Technology and Cyber Security* | *Some Technology and Cyber Security* | Few *Strategic use of Technology* |
| Microfoundations for Digital Servitisation *Topics* | Many *Leadership and Innovation* | *Some Technology and Operational Control* | *Many Technology innovation and modularity design* | *Few Leadership and Innovation* | Few *Technology and Operational control* |

Note: Author's own.

Table 5.3 summarises the frequency of mention of each topic discussed in the following analysis by theme and group. As already mentioned, it does not indicate the number of mentions but whether the mentions are many, some, or few/none. It also indicates what topics are discussed and illustrated in each of the themes and represents the different patterns in the analysis. In addition, the theme summaries are incorporated at the beginning of each theme as a placemark.

### *5.2.1 RQ 1: Theme 1 – Contextual Factors for Digital Servitisation Transition*

Based on Table 5.3 above, the discussion of the summary of Theme 1 is related to Research Question 1. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

#### **5.2.1.1 Evidence of Contextual Factors of Digital Servitisation Transition**.

The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.4: Theme Summary**

| ***RQ 1 Theme 1: Contextual Factors for Digital Servitisation*** |
|---|
| *Participant 2 "On the other hand, organisations that keep trying to fit these new generations into old moulds are likely going to become redundant."* |
| *Participant 11 "So, there's definitely a direct impact from external factors like geography, economy, and broader societal considerations on the kind of digital services and how they're consumed."* |
| *Participant 11 "Point about external factors, such as economic prosperity and the availability or lack of smartphones in certain markets, directly influences how and what products are offered to clients."* |

| ***RQ 1 Theme 1: Contextual Factors for Digital Servitisation*** |
|---|
| *Participant 7 "The challenge is further compounded when technology begins replacing traditional roles. In a 5,000-seat call centre, for instance, the adoption of AI could replace 10% of the workforce."* |
| *Participant 8 "You can't make internal decisions in isolation without considering how they impact customers, markets, or even compliance issues like anti-competitive practices."* |
| *Participant 12 "The impact of external adoption on internal outcomes is clear. For instance, fiber to the home has driven more investment in fiber for banks than any direct internal need. I remember banks telling me that consumer internet usage and services like ChatGPT have driven more capacity-building efforts than any of their internal branch systems or terminals ever did."* |
| *Participant 3 "Global expansion presents its own challenges, particularly because the application is in the employment landscape, which varies by jurisdiction."* |
| *Participant 10 "However, there's a big question I have regarding the advent of AI, specifically generative AI. While it's amazing and will bring immense value, my warning is about the guardrails needed to manage AI."* |
| *Participant 1 "Their influence at both a political, societal and corporate perspective, is far greater and therefore have a much bigger influence from all have influenced the outcome of digital service offering."* |
| *Participant 4 "Once we get those things right, the possibilities are endless. Think of what we'll be able to do for the environment, for society, and for so many other important areas."* |
| *Participant 5 "One question I've often wondered about is, as we move into a more high-speed, digitised environment, does the customer become more of a number, a customer ID, and less of a person?"* |
| *Participant 13 "The external factors, from my understanding, mainly revolve around the cost and availability of systems and their service offerings."* |

Note: Author's own.

#### 5.2.1.2 In-case and Cross-case Analysis of the Evidence. In-case Analysis:

In the Financial Services group (blue), Participant 2 noted that organisations that continue to use outdated practices and do not adapt services to the needs of younger generations will eventually become obsolete. Participant 11 pointed out the influence of external factors on the use of digital services, including economics, geography and societal norms. Participant 11 also emphasised the impact of external market conditions on business strategies, mentioning how economic prosperity and the availability or lack thereof of smartphones in specific markets directly affect how products are offered to customers. These insights suggest how technology influences societal changes and economic conditions through digital transformation of the financial services industry.

In the Telecommunications group (orange), Participant 7 gave the example of a 5,000-seat call centre where Artificial Intelligence (AI) could replace 10% of the workforce. Participant 8 highlighted regulatory compliance and market impact as external factors that should be considered when making internal business decisions. Participant 12 underscored the impact of external technological trends on internal operations by pointing out that technology initiatives by external factors such as consumer internet usage and technologies such as ChatGPT rather than traditional internal systems have been catalysts for growth. Technology adoption impacts society as it shapes the workforce, changes business processes and forces organisations to rethink their compliance and marketing strategies in the digital age.

In the Technology Enablement group (yellow), Participant 3 highlighted the difficulties associated with the globalisation of technology, particularly the impact of different labour laws in various countries on the use of technology. Participant 10 reflected an awareness of the increasing use of AI, particularly generative AI, and the need for legislation for businesses to benefit from the technology and carefully consider the impact on employment, society, and regulations.

In the Professional Services group (pink), Participant 1 highlighted the influence of political, social and entrepreneurial factors on creating digital service offerings. Participant 4 underlined how successfully implementing digital strategies can positively impact society, particularly in tackling other societal challenges and environmental protection. Participant 5 expressed concern about digitising customer experiences and wondered whether customers are being depersonalised and reduced to mere numbers in a fast-paced, digital world. The far-reaching societal impact of digital transformation and the need to maintain human-centric methods in the face of rapid technological advancement are two insights from this group.

In the Manufacturing group (grey), Participant 13 noted that, in their view, the most important external factors are related to the availability and cost of technology systems and the associated service offerings.

**Cross-case:** External factors characterise the digital transformation uniquely in all groups. The Financial Services group highlighted how societal and economic conditions, including the availability of technologies such as smartphones, influence digital services and product offerings. It highlighted that organisations using outdated practices risk becoming obsolete as younger generations demand modern solutions. The

Telecommunications group focused on technology's operational and societal impact, pointing out how AI could replace the role of the workforce and how consumer-facing technologies such as ChatGPT are reshaping processes. They also emphasised the need for compliance with regulations and market forces.

The Technology Enablement group highlighted the challenges of global technology deployment, particularly concerning differing labour laws, and raised concerns about managing the societal impact of AI, particularly generative AI, through appropriate regulation. In the Professional Services group, discussions centred around the societal and environmental benefits of successful digital strategies, while concerns were raised about the depersonalisation of customer experiences in the digital age. Finally, the Manufacturers group focused on the cost and availability of technology systems as the key external influences affecting their digital transformation efforts.

#### 5.2.1.3 Conclusion of Contextual Factors of Digital Servitisation Transition.

The similarities are the concerns about the impact of external forces on digital transformation. The realisation is that external factors, including societal changes, technological advances and economic conditions, are having a particular impact on how businesses operate and deliver services. In terms of the impact of consumer technology on business strategies, the Financial Services and Telecommunications groups emphasised the importance of adapting to technological advances and societal changes. The Professional Services and Technology Enablement groups expressed concern about the impact of AI and digitalisation on society, pointing out that these changes have an impact on business operations and employment, social structures and regulatory compliance.

The groups' responses to these external influences and priorities varied. The Financial Services group stated that companies that do not adapt to changing consumer behaviour risk becoming obsolete. The Telecommunications group, on the other hand, focused on the need for regulatory compliance and the operational impact of AI on the role of employees. The Technology Enablement group highlighted the need for regulatory oversight of AI and regulations as reasons for their concern about emerging technologies. In contrast, the Professional Services group expressed concerns that were more human-centred and focused on the possibility of depersonalisation of customers in an increasingly digital environment. Finally, the Manufacturing group cited the cost and availability of technological systems as a reason for their concern, reflecting a more operations-orientated approach.

### *5.2.2 RQ 1: Theme 2 – Key Challenges of Digital Servitisation Transition*

Based on Table 5.3 above, the discussion of the summary of Theme 1 is related to Research Question 1. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

**5.2.2.1 Evidence of Key Challenges of Digital Servitisation Transition.** The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.5: Theme Summary**

| ***RQ 1 Theme 2 – Key Challenges of Digital Servitisation Transition*** |
|---|
| *Participant 2 "The biggest problem is over-investment and the inability to pivot or stop when you should."* |
| *Participant 9 "The challenges that then lead to the need for that kind of transformation is probably the age-old thing in corporates, legacy systems and multiple of those put together with sticky tape, giving you a crazy customer experience that's uncoordinated, fragmented, high friction"* |
| *Participant 11 "However, internal factors like strategy, technical complexity, fiscal appetite, and alignment across different segments all play a role in making this happen. Convergence doesn't occur overnight, despite how simple it may seem."* |
| *Participant 7 "People tend to focus on their silos, believing, "This is what I do today," without considering the bigger picture of what could be achieved through a different way of working."* |
| *Participant 8 "In the past, many organisations operated in silos, with clear divisions between internal and external functions. That model has to change. Thankfully, we're already seeing a shift, with teams increasingly able to collaborate more effectively thanks to technology."* |
| *Participant 12 "It's not just about whether you trust these machines, but whether there's a willingness to let go of control and introduce new things, especially in companies that have been successful for a long time. Such companies often resist innovation, preferring to prove that something won't work rather than trying to make it succeed."* |
| *Participant 6 "We've definitely started questioning some of the choices we've made and how we've actually put everything together. Although we wanted it to be modular and easy, it hasn't worked out to be quite as straightforward as we anticipated."* |
| *Participant 10 "The biggest thing I've seen, and this comes in many parts, is that some companies are facing very dire situations from a business perspective—in other words, they either need to pivot or close. These companies are forced to make radical changes in order to survive."* |
| *Participant 1 "Embracing digital technology has always been I think what's really been lacking is the orchestration of these technologies across."* |

| *RQ 1 Theme 2 – Key Challenges of Digital Servitisation Transition* |
| --- |
| *Participant 4 "Right now, I find myself in the former situation—working in an organisation that is lethargic, where the attitude is "we can keep doing what we're doing, and things will be fine." That's a huge threat to the organisation because it desperately needs to digitally transform its service offering. That's my experience here."* |
| *Participant 5 "We weren't particularly good at this. I think it was difficult for our organisation to shift from linear business thinking to platform business thinking, and I believe we missed an opportunity in the process."* |

Note: Author's own.

**5.2.2.2 In-case and Cross-case Analysis of the Evidence. In-case:** The in-case analysis of the evidence shows that the Financial Services group (blue) identified several key challenges that impede the digital servitisation process efforts, with cross-functional alignment being a key issue. Participant 2 focused on organisational inertia, highlighting over-investment in projects and a lack of flexibility to pivot when needed. Participant 9 noted that the burden of legacy systems was another important issue. The fragmented and inefficient customer experience caused by these legacy systems is a significant barrier to incorporating modern digital solutions. This difficulty highlights the need for the updates to infrastructure to remain competitive in delivering seamless digital services. In reflection on a common problem with internal collaboration and decision-making, Participant 11 mentioned the difficulty of coordinating strategy and technology across different parts of the organisation, highlighting the technical difficulty of coordinating changing technological capabilities with strategic objectives. The group recognised that driving digital servitisation in the financial sector would require addressing these cross-functional challenges, modernising technology and promoting greater organisational flexibility.

The Telecommunications group (orange) identified several key challenges on their journey to digital transformation, in particular, overcoming silo thinking and fostering collaboration. Participant 7 pointed out that people tend to focus on their specific roles or "silos" without considering the bigger picture or the potential benefits of working differently. This reflects the challenge of cross-functional alignment, where departments work in isolation, preventing innovation and slowing progress. Participant 8 reflected that in the past, organisations worked with clear divisions between internal and external functions, which hindered effective collaboration, noting that there is now a shift towards more teamwork enabled by technology, although this change remains challenging. Participant 12 pointed to another significant barrier: the difficulty of letting go of control

and embracing new technology, particularly in organisations that have been successful over the long term, highlighting that the organisations often resist innovation and focus on proving that new approaches do not work rather than exploring how they could be successful.

The Technology Enablement (yellow) group emphasised that adaptability and a re-evaluation of the approach to digital transformation are crucial. Participant 6 delved deeper into the challenges of technology integration, noting that while the organisation had originally designed its systems to be modular and flexible, the implementation proved to be a complex and intricate process. Participant 10 pointed out that many companies in this sector face existential challenges where they either reorient themselves or risk closure—highlighting increased pressure on organisations to make changes and the challenges faced to adapt. Companies are being forced to rethink their business models and make significant changes to survive in an increasingly competitive and digitalised environment.

The Professional Services (pink) group noted that changing business models and organisational inertia are two internal challenges. Participant 1 pointed out that implementing technologies needs to be coordinated across the organisation. This indicates a cross-functional alignment issue where insufficient coordination in integrating digital tools across all functions hinders the transformation process. Participant 4 expressed concern about organisational sluggishness and the belief that sticking to current procedures is enough, describing them as resistant to change and highlighting the challenge of recognising the urgent need for digital transformation, which threatens their long-term viability. Participant 5 emphasised the challenge of moving from a linear business model to a platform-based strategy, asserting that the company needs to seize key opportunities. The company's rigid mindset has hindered its ability to adopt modern, scalable business models and seize opportunities that could have accelerated digital transformation.

**Cross-case:** The cross-case analysis highlights all groups' challenges in digital servitisation related to cross-functional alignment, technology integration and organisational inertia. The Financial Services group emphasised that over-investment in legacy systems hinders agility and innovation and impacts strategy with technology. Telecommunications underscored silo thinking and how it prevents effective collaboration and resists the adoption of new technologies while struggling with legacy systems. The Technology Enablement group emphasised the complexity of integrating

modular systems and the existential pressure to adapt or close, which requires a rethink of business models. The Professional Services group noted how rigid internal mindsets are and finds it difficult to move from traditional business models to platform-based strategies — the need exists for improved collaboration, agility and technological upgrades to drive digital transformation successfully.

**5.2.2.3 Conclusion of Key Challenges of Digital Servitisation Transition.** The similarities between the Financial Services and Telecommunications groups are that they cited cross-functional alignment and the challenge of legacy systems as major obstacles to digital servitisation. The Financial Services group pointed to problems with organisational flexibility and technical coordination, particularly when adapting legacy systems and aligning strategy with technology. Similarly, the Telecommunications group pointed to silo thinking and resistance to collaboration as significant barriers, noting that many organisations still struggle to overcome internal barriers to foster innovation. Both groups recognised the need for organisational adaptability and infrastructure modernisation. However, while the Financial Services group focused on internal decision-making and over-investment in outdated projects, the Telecommunications group pointed to the difficulty of embracing new technologies, particularly for long-established companies.

The differences between the Technology Enablement and Professional Services groups highlighted the importance of organisational adaptability, albeit with slightly different emphases. The Technology Enablement group discussed existential challenges where companies are under significant pressure to realign or risk closure and emphasised the importance of re-evaluating business models and integrating flexible systems. On the other hand, the Professional Services group focused on the challenge of organisational lethargy and the struggle to shift from traditional, linear business models to platform-based strategies. Both groups highlighted the internal resistance to change, with the Technology Enablement group highlighting the technical complexity of implementation. In contrast, the Professional Services group emphasised the need to rethink and take advantage of new opportunities and scalable models.

### *5.2.3 RQ 1: Theme 3 – Key Enablers of Digital Servitisation Transition*

Based on Table 5.3 above, the discussion of the summary of Theme 3 is related to Research Question 1. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

**5.2.3.1 Evidence of Key Enablers of Digital Servitisation Transition.** The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.6: Theme Summary**

| ***RQ 1 Theme 3 - Key Enablers of Digital Servitisation Transition*** |
|---|
| *Participant 2 "Hands-On Guidance: They encourage consumers to open their own phones and guide them through the process in real-time."* |
| *Participant 9 "We need the new tech. Fintechs need the market or the customer base, and that's where the secret sauce can happen. But then you also need organisations that are able to partner for technology. And I don't know whether that's always the case, because that's a difficult thing."* |
| *Participant 11 "Profitability also plays a role. If an organisation is not under financial distress, it might make more strategic investments."* |
| *Participant 7 "Labour in South Africa is relatively affordable, making it challenging to build a strong business case for moving towards a cloud-based infrastructure and hosting services, especially when manual labour can deliver similar services at a lower cost."* |
| *Participant 8 "This is where understanding business outcomes becomes essential. What are the specific outcomes we want to accomplish? How are customers engaging with us? Where do they want to buy? How do they prefer to communicate, and what are they saying about us? It's about monitoring these external factors and responding effectively."* |
| *Participant 12 "It's generally about efficiency, cost-saving, generating new revenue streams, or improving customer experience. You can map this right back to the company's key drivers."* |
| *Participant 3 "What we've noticed has become a massive game changer for us is our ability to solve problems using technology. Our business isn't product-centered yet—we're still transitioning—but what we really focus on is selling trust, not software. We often say, "We don't sell software; we sell trust." The goal is to convince customers that we can solve their problems in a really effective way."* |
| *Participant 6 "This raises questions about how to get customers to adopt the offering and commit to a purchase."* |
| *Participant 10 "So, when you put everything together, the key factors are the user experience, cost, and security. Am I getting the right experience? Is it affordable? Is it secure? Do I have control over the service? These are crucial aspects from the customer's perspective."* |
| *Participant 1 "The transition won't happen in an organisation doesn't see a benefit quantum, and that benefit is very, hugely driven by financials."* |
| *Participant 4 "Digital transformation will enable innovations we haven't thought of yet, and it's going to create jobs that don't even exist today. That's what makes it so exciting."* |
| *Participant 5 "From a client's perspective, they're likely looking for something that provides everything they need in one place—a one-stop shop."* |

| *RQ 1 Theme 3 - Key Enablers of Digital Servitisation Transition* |
| --- |
| *Participant 13 "One specific example is a license-based model that you can cancel at any point, compared to a traditional software package you purchase outright."* |

Note: Author's own.

**5.2.3.2 In-case and Cross-case Analysis of the Evidence. In-case:** The Financial Services group (blue) recognised customer experience as an important factor for digital digitalisation. Participant 2 emphasised the importance of real-time, hands-on guidance, explaining that encouraging customers to take control of their digital interactions, such as opening their phone and being guided step-by-step through technical processes, enhances the user experience. Regarding leadership and technology understanding, Participant 9 emphasised the need for technology partnerships, specifically that fintech companies rely on access to markets and customer tribes but also need strong collaboration with other organisations to be successful. This shows that leadership in technology partnerships is essential to drive new digital solutions. Participant 11 discussed financial drivers, pointing out that an organisation's financial position plays a critical role in enabling strategic investment in digital initiatives, suggesting that profitability can make or break investment decisions in digital transformation projects. Highlighting the importance of customer centricity and technology is important for the further development of technological solutions.

The Telecommunications group (orange) acknowledged the role of financial drivers and customer experience as essential prerequisites for the digitisation of services. Participant 7 pointed out that the affordability of labour in South Africa makes it difficult to justify investment in cloud-based infrastructure when manual labour can provide similar services at a lower cost. This suggests the tension between operational costs and infrastructure modernisation. Participant 8 emphasised the importance of understanding business outcomes and customer interaction, highlighting that knowing how customers prefer to interact, where they shop and how they communicate is critical to improving the customer experience and responding effectively to external market factors. Participant 12 added that the key drivers for digital transformation in their organisation focus on efficiency, cost savings, unlocking new revenue streams and improving the customer experience, linking these outcomes directly to the organisation's key business drivers. This emphasises the focus on internal efficiency and external customer satisfaction as critical components of their digital strategy.

The Technology Enablement group (yellow) focused on customer experience and leadership and technology understanding as key prerequisites for digital servitisation. Participant 3 emphasised that its business model is shifting to solving customer problems using technology, focusing on building trust rather than selling products. This shift considers a deep understanding of customers' need for assurance about the organisation's ability to solve their problems. Participant 6 raised concerns about customer adoption and emphasised the importance of convincing customers to engage with digital solutions, which requires building trust and clarity about the value proposition. Participant 10 underscored the customer perspective, citing user experience, cost, security and control as the key factors that customers consider before adopting new digital services. This demonstrates that customer experience and trust are critical to driving adoption and ensuring that digital solutions effectively fulfil customers' needs.

The Professional Services group (pink) emphasised financial drivers, customer experience and an understanding of leadership and technology as key enablers for digital servitisation. Participant 1 noted that financial benefits play a crucial role in the transition, as companies will not continue if they do not see tangible financial benefits. Participant 4 focused on the potential for innovation and job creation that digital transformation brings. Highlighting that these advances can enable entirely new business models and jobs that do not yet exist, making the future of digital extremely exciting. Participant 5 reflected on the conversation towards customer experience, noting that customers are increasingly looking for one-stop solutions that bring together everything they need in a single platform. This reflects the growing demand for comprehensive, integrated services that enhance the customer experience and increase the convenience of digital services.

In the Manufacturing group, Participant 13 (grey) highlighted the flexibility of a licence-based model where customers can cancel at any time, as opposed to traditional one-off software purchases. This shift shows how the manufacturing sector is embracing more customer-centric digital services.

**Cross-case:** The cross-case analysis shows that customer experience and financial drivers are central themes in all groups' digital service endeavours. The Financial Services group emphasised hands-on, real-time customer contact and the importance of guiding customers through digital interactions to enhance their experience. They also emphasised the importance of technology partnerships and financial stability as key drivers for strategic digital investment. The Telecommunications group also focused on

customer experience, highlighting the importance of understanding customer preferences and external factors to drive business outcomes. Their digital strategy also emphasised cost efficiencies and tapping into new revenue streams. The Technology Enablement group emphasised that customer trust and adoption are critical, with leadership and technology understanding playing a crucial role in ensuring digital solutions meet customer needs. They emphasised that factors such as security and cost strongly influence customers' decisions. The Professional Services group emphasised digital services' financial benefits and innovation potential while highlighting the demand for integrated, one-stop solutions to improve the customer experience. Finally, the Manufacturing group focused on customer-centric flexibility with their licence-based models and showed how they adapt to customer demands for more flexible, digital service offerings.

**5.2.3.3 Conclusion of Key Enablers of Digital Servitisation Transition.** The similarities across the groups – Financial Services, Telecommunications, Technology Enablement, Professional Services and Manufacturing – comprised the importance of customer experience and financial factors as key to digital service optimisation. All groups recognise that improving customer interaction and delivering seamless digital experiences are critical to remaining competitive in their respective industries. In addition, financial stability is generally seen as a critical factor in enabling organisations to invest in and maintain their digital transformation initiatives. Leadership skills and technology understanding are needed, particularly when it comes to leading organisations through partnerships, technology adoption and strategic decision-making.

However, the differences lie in how these issues are prioritised and addressed. The Financial Services group focuses on partnerships with FinTechs and ecosystem providers to drive innovation, while the Telecommunications group grapples with balancing operational costs and infrastructure investment given the relatively low labour cost in their sector. The Technology Enablement group is more concerned with building trust and ensuring that digital solutions effectively solve customer problems. In contrast, the Professional Services group is driven by the financial benefits of digital transformation and strongly focuses on innovation and integrated solutions. Finally, the Manufacturing group is characterised by its focus on flexible service models that meet changing customer needs and thus takes a customer-centric approach to digital services.

### *5.2.4 RQ 1 Theme 4 – Digital Servitisation*

Based on Table 5.3 above, the discussion of the summary of Theme 4 is related to Research Question 1. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

**5.2.4.1 Evidence of Digital Servitisation.** The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.7: Theme Summary**

| ***RQ 1 Theme 4 - Digital Servitisation*** |
|---|
| *Participant 2 "Now, if you look at the digitalization of life insurance, many FinTech products have been digitalized, but the only one that sees rapid uptake is the one that consumers understand."* |
| *Participant 9 "And the reason that I'm also saying that is because of the space that I've moved into now where we're talking AI. We're talking large language models. We're talking personalisation, customisation, personalised messaging engines, chatbots, and at the end of the day, the marketing function is sitting here, crafting emails on Word and delivering it through a thing called Evolitic as an example, or something called Expression."* |
| *Participant 11 "Today, we have multiple layers of technical enablement designed to retain information and service clients in the most efficient way possible."* |
| *Participant 11 "But to leverage economies of scale and better serve the customer, there is a need for convergence. For example, as a customer spanning multiple segments, I'd prefer a unified view of my services when I log into the app."* |
| *Participant 7 "However, this approach creates a significant challenge. It doesn't address the existing technical debt or enhance the efficiency needed for evolving from products to services."* |
| *Participant 8 "I believe the way organisations utilise technology has fundamentally changed. Initially, technology was seen as a means to an end, but now, due to its increased accessibility, it has transformed how organisations engage with and interface with their customers. It's no longer just about operations—it now spans the entire customer lifecycle, from winning new business and driving leads to managing ongoing interactions."* |
| *Participant 12 "However, in the last 12 months, we've started to see successes in AI, automation, and digitalisation. While AI still has a long way to go, nothing drives adoption and long-term strategy like consistent success."* |
| *Participant 3 "For example, if one customer encountered an error in the application, it was very tricky to go back and fix that bug across all 20 copy-pasted versions. It was inefficient. We decided to redevelop the product as a new, cloud-enabled, multi-tenanted solution."* |
| *Participant 6 "Another significant aspect is the data component. On the digital side of data, we develop models, and through these models, we can apply digital rules that expedite processes."* |

| ***RQ 1 Theme 4 - Digital Servitisation*** |
|---|
| *Participant 10 "You can't go at it halfway because you suddenly decide there's no budget to support it. It's the same as playing golf—you don't just show up to win the Masters; you practice. Similarly, if you're a digital service provider, the challenges are to get the right infrastructure, the right tools, and everything else in place to fully support what you're trying to offer."* |
| *Participant 10 "The next essential factor is the security of transactions across platforms, whether through digital authentication or basic cybersecurity measures. Another crucial consideration is the business outcome—Can I generate revenue with this offering?"* |
| *Participant 4 "AI brings both excitement and nervousness, and there's also the growing concern around cybersecurity. These are big challenges. When thinking about the future, AI and security are two major areas of concern. If you're helping a customer digitally transform through the services you provide, you must guarantee that those threats are under control. I don't know of anyone who can confidently say they've fully mastered that yet. For any service provider, staying on top of these challenges is a long journey, and it's crucial to get it right—there's no room for error."* |
| *Participant 4 "Another external factor that's particularly concerning for me is cybersecurity. The more we digitalise, the more opportunities there are for cyber threats. How do we stay ahead of that? I think cybersecurity is going to become a significant factor in our lives."* |
| *Participant 5 "My understanding of digital service provisioning is essentially about taking a process, function, or service that was previously done in an analogue fashion—whether that's paper-based, using a bicycle courier, or through a telephone—and re-evaluating the process. This involves removing elements that no longer make sense, adding components that streamline the workflow, and ultimately delivering a more efficient and cost-effective service, both in terms of time and resources. Whether it's the delivery of information or the transport of information, that's how I see digital service provisioning."* |
| *Participant 13 "The new system, I'm told, has better features, and they're looking into things like the planning module, which will track machine cycle times, cavities, units per hour, and efficiency."* |

Note: Author's own.

**5.2.4.2 In-case and Cross-case Analysis of the Evidence. In-case:** The Financial Services group's (blue) in-case analysis highlighted that technology used to improve customer loyalty and internal processes is critical. Participant 2 highlighted the ability of consumers to understand and adopt these digital services, which emerged as a critical driver for digital servitisation. While Participant 9 prioritised AI and personalisation, Participant 11 focused more on operational efficiency and the function of digital enablement layers. These observations suggest the complexity of digital servitisation, where success depends on the convergence of internal efficiency, customer experience and strategic use of technology.

The Telecommunications group (orange) shared common experiences regarding the transformative role of technology in digital servitisation. Participant 7 pointed to internal challenges, particularly the need to remove technical debt, which prevented the organisation from evolving from product-based to service-based models. Participant 8 highlighted how technology is reshaping the entire customer lifecycle, from first contact to ongoing interaction, and showed how customer experience has moved to the centre of their strategy. Participant 12 highlighted that recent AI, automation and digitisation successes have been critical to technology adoption. The strategic value of technology improves both customer services and internal processes. While some organisations focus on internal efficiency and others prioritise customer engagement, it remains critical to strike a balance between the two. Achieving this balance ensures operational excellence while providing a seamless digital experience for customers.

The Technology Enablement group (yellow) identified infrastructure readiness, security and data strategy as the most important prerequisites for digital servitisation. To overcome the inefficiencies of legacy systems, Participant 3 discussed the need for scalable, cloud-enabled solutions and highlighted the importance of developing technology to support internal processes. In this vein, Participant 6 spoke about utilising data to improve processes and streamline operations. Participant 10 broadened the discussion by emphasising the importance of ensuring business outcomes such as generating revenue and securing transactions, while the other participants focused more on internal operational improvements. This emphasises the balance between a commitment to secure, value-driven customer services and a fundamental technological readiness, both of which are essential for the success of digital transformation.

The Professional Services group (pink) highlighted two critical aspects of digital servitisation: cyber security and process efficiency. Participant 4 underscored that with the advancement of digitalisation and Artificial Intelligence, there is a growing concern about cybersecurity risks. The participant also pointed out that companies must stay one step ahead of potential threats to maintain customer trust. During increasing cyber threats, the participant emphasised the importance of understanding security protocols and linked cyber security and the long-term reliability of services. Participant 5, on the other hand, focused on internal process re-engineering, where outdated workflows are modernised through digital service delivery to increase cost efficiency and streamline service delivery. Highlighting how to maintain a balance for the internal transformation is critical and maintaining a strong focus on external cyber security remains a top priority.

The Manufacturing group's Participant 13 discussed the introduction of a new system with advanced features while highlighting the development of technology and its internal impact, suggesting that evolving technology develops the strategy through effective and efficient operational performance.

**Cross-case:** The cross-case analysis shows that all groups view digital servitisation as a balance between improving the customer experience and increasing internal efficiency through the strategic use of technology. The Financial Services group highlighted AI and personalisation to increase customer loyalty while improving operational efficiency. The Telecommunications group focused on AI and automation to transform customer interactions and internal processes while addressing challenges such as legacy systems. The Technology Enablement group emphasised infrastructure readiness, security and data strategy to drive revenue generation and process optimisation. The Professional Services group highlighted cyber security and modernising internal workflows, recognising that external threats and internal efficiencies are critical to digital servitisation. The Manufacturing group emphasised the internal impact of evolving technology and focused on improving operational performance through advanced systems. A balance between customer-centric innovation and internal operational readiness is essential for successful digital transformation, with cybersecurity and operational efficiency playing a vital role across all groups.

**5.2.4.3 Conclusion of Digital Servitisation.** The similarities across all groups show that digital servitisation is essential for the integration of digital tools into their service offering. Each group recognises the importance of technology in increasing internal productivity, improving customer experience and ensuring security. The Telecommunications and Financial Services groups have focused heavily on automation, customer interaction and personalisation as key elements of their digital strategies, while recognising the internal challenges posed by outdated systems and inefficiencies. Both groups emphasised the need for robust cybersecurity protocols to protect customer interactions in an era of digitalisation. The Manufacturing group shares this focus on using technology to improve operational performance and emphasises the strategic role of advanced systems in improving internal processes.

In terms of differences, the Telecommunications and Financial Services groups have prioritised customer experience and personalisation, while the Professional Services and Technology Enablement groups have focused on cyber security. The Professional Services group endeavours to stay one step ahead of cyber threats, with a focus on data

security and infrastructure scalability. The Technology Enablement group also emphasised operational efficiency and scalability as prerequisites for digital transformation. While all groups recognise the importance of cybersecurity, the Professional Services and Technology Enablement groups see it as central to the sustainability of digital services, while the Financial Services and Telecommunications groups see it as part of a broader strategy closely linked to customer experience and operational efficiency. The Manufacturing group focused more on the internal impact of technology and concentrated on operational improvements through system upgrades rather than customer-centric digitalisation strategies.

### *5.2.5 RQ 1: Theme 5 - Microfoundations for Digital Servitisation Transition*

Based on Table 5.3 above, the discussion of the summary of Theme 5 is related to Research Question 1. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

#### 5.2.5.1 Evidence of Microfoundations for Digital Servitisation Transition.

The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.8: Theme Summary**

| ***RQ 1 Theme 5 – Microfoundations for Digital Servitisation*** |
|---|
| *Participant 2 "The ability to choose the right technology is usually not even delegated—it's abdicated to IT."* |
| *Participant 9 "So, I don't know who mentioned it, but I said we need to treat our careers as a game of skills acquisition. And I heard another stat the other day that, within your current job, you need to be learning 10 new skills per year."* |
| *Participant 11 "Then there's the strategic roadmap—the plans crafted for the short, medium, and long term, which guide the organisation's actions. These roadmaps ensure that everything aligns in the most sensible way for the organisation's long-term goals."* |
| *Participant 7 "Looking to the future, we believe this collaborative approach will be the way to unlock opportunities—not just for us as an organisation but also in how we approach digital transformation solutions for our customers."* |
| *Participant 8 "The key is understanding what's happening externally and translating that into internal projects or initiatives that address real problems. In doing so, are we creating business value, or are we just changing things for the sake of it? That's the crux of it—ensuring the transformation aligns with real business value and customer needs."* |

| ***RQ 1 Theme 5 – Microfoundations for Digital Servitisation*** |
|---|
| *Participant 12 "In the future, building the best PowerPoint presentation won't define a senior executive. Recently, I saw someone use CoPilot to create a presentation, and it looked exactly the same as mine. So, creating presentations won't be a big deal anymore."* |
| *Participant 3 "We don't build what we believe will be the next fantastic product that all clients will buy."* |
| *Participant 6 "Learned a lot throughout this process, especially when it comes to engaging with third parties. We've worked with several external partners and quickly realised which ones were going to be successful and which ones weren't. Now, we've progressed further with the ones that showed promise."* |
| *Participant 10 "I've also seen individuals come in who have been able to lift the veil and say, Hey, we need to look at the world differently. It's almost a push-pull dynamic."* |
| *Participant 1 "I was head of innovation. My role was really to understand from a horizon 3 perspective what's coming down the line, to look at how an organisation, at that time, a large service provider, needs to start embracing these kind of technologies."* |
| *Participant 4 "If you're offering a service, you need to ensure it's predictable. The moment the customer is surprised, it means you're not deploying the digital technology properly or you're not using the data correctly."* |
| *Participant 5 "There were cultural challenges, trust challenges, and tech challenges. When you try to be everything to everyone—by the way, that's never advisable—you end up with a bloated, overly complex stack of technologies that require a lot of rework and can become error-prone."* |
| *Participant 13 "Once we have that data, we can start analyzing why one machine performs better and apply those learnings across the board."* |

Note: Author's own.

**5.2.5.2 In-case and Cross-case Analysis of the Evidence. In-case:** The in-case analysis of the participants from the Financial Services group (blue) underscored leadership, learning and strategic planning as the three key components needed for digital servitisation. Participant 2 mentioned that senior management is rarely involved in technology decisions, often made by the information technology (IT) department alone. Participant 9 reflected on the value of continuous training and flexibility and pointed out that a career should go hand in hand with continuous skills development. A strategic roadmap is essential to ensure that technology decisions are aligned with the organisation's long-term goals, as Participant 11 pointed out. To effectively drive digital servitisation, the group emphasised the need for more decisive leadership in technology decisions, a culture of continuous learning and improved strategic planning.

The Telecommunications group (orange) emphasised teamwork and aligned customer requirements and business value with digital transformation. Participant 7 discussed the

importance of a collaborative approach to exploit opportunities within the company and offer solutions to customers. Participant 8 emphasised the need to ensure that digital initiatives create real value and raise whether change is being implemented for the sake of change or to solve real business problems. The group acknowledged that automation is changing the nature of work. Participant 12 gave an example of how CoPilot and similar tools are reorganising tasks, such as creating presentations to free up executives' time for more strategic matters. This demonstrates a forward-thinking understanding of how digital transformation will impact leadership and operations.

The Technology Enablement (yellow) group emphasised the value of practical experience and flexibility in their strategy for managing digital transformation. Participant 3 understood strategic product development by emphasising avoiding products that do not meet customer needs. Discussing the value of partnerships in their innovation journey, Participant 6 emphasised the importance of working with external partners and discovering which partnerships lead to success. Participant 10 emphasised a shift in mindset, saying that everyone had challenged accepted wisdom and pushed the group to approach problems in novel ways, fostering constant innovation and adaptation. The team clarified that it was essential to take in new information from external sources and change internal procedures to adapt to operational and market demands.

The Professional Services (pink) group emphasised the importance of forward-looking innovation, consistency in service delivery and overcoming internal barriers. In predicting future technological trends and monitoring the company's adoption of new technologies, Participant 1 emphasised the importance of leadership. Participant 4 emphasised that a customer's surprise indicates poor implementation, meaning that data-driven and predictable digital service delivery is necessary. Participant 5 pointed out the difficulties arising from culture, trust and technology and warned against trying to please everyone, which can lead to unnecessarily complicated and ineffective systems. This group emphasised the need for focused, streamlined service delivery and technology leadership to drive digital transformation.

The Manufacturing group (grey) emphasised making data-driven decisions to increase operational efficiency. As Participant 13 pointed out, informed decision-making can improve overall productivity by applying the insights gained from analysing machine performance to other operations, highlighting the importance of data for ongoing decision-making.

**Cross-case:** The cross-case analysis shows that all groups emphasise the importance of leadership, strategic planning and innovation as essential components of digital servitisation. The Financial Services group emphasised the need for senior management involvement in technology decisions, continuous capability development and a clear strategic roadmap to align technology decisions with long-term goals. This highlights the value of leadership and planning in driving digital servitisation. The Telecommunications group underscored teamwork, aligning customer needs with business value and ensuring digital initiatives create tangible benefits. They also explored the evolving role of automation in freeing up resources to make strategic decisions. The Technology Enablement group emphasised flexibility, hands-on experience and innovation, focusing on building successful external partnerships and constantly adapting to market demands. This group emphasised the need to absorb new information and revise internal processes. The Professional Services group emphasised the importance of forward-thinking innovation, consistent service delivery and overcoming internal barriers, with a focus on leadership and avoiding overly complex systems. Finally, the Manufacturing group emphasised the importance of data-driven decision-making to increase operational efficiency and recognised the role of insight in improving productivity across all business areas. Each group has its own focus, but all agree that strong leadership, strategic planning and innovation are necessary for successful digital servitisation.

**5.2.5.3 Conclusion of Microfoundations for Digital Servitisation.** The similarities highlighted by the groups indicate that the importance of leadership in promoting digital services is a constant theme. The Financial Services group argues for greater involvement of leaders in technology decisions and emphasises the importance of a clear strategic roadmap, which aligns with the Professional Services group's emphasis on the role of leaders in anticipating technological change. Both groups take a proactive approach and seek to build trust through clear vision and planning. Similarly, the Telecommunications and Technology Enablement groups emphasise strategic thinking and focus on aligning digital transformation with business needs while fostering innovation and partnerships. This alignment of leadership and strategy across sectors emphasises the critical nature of top-down leadership in digital initiatives.

It was clear that the groups have different approaches to innovation and operational control. The Professional Services group focused on overcoming internal cultural and technological challenges, while the Technology Enablement group emphasised flexibility and hands-on experience, particularly through external partnerships. In contrast, the Telecommunications group focused on automation tools such as CoPilot to redistribute

tasks, while the Financial Services group focused on continuous capability development and strategic alignment. The Manufacturing group was characterised by a more pragmatic and data-driven approach to improving operational efficiency, in contrast to the more innovation-focused priorities of the other groups.

### *5.2.6 Research Question 1: Conclusion*

The below table, Table 5.9, concludes on the theme description as per the Conceptual Framework and provides a description of the related themes and the similarities and differences from the respective theme analyses.

**Table 5.9: Research Questions 1 Theme Analyses**

| Theme | Theme Description | Similarities Description | Differences Description |
|---|---|---|---|
| Contextual Factors | Impact of external and internal factors on digital transformation | All groups recognise the critical role of external factors influencing digital transformation | Each group prioritises different external challenges, from societal impacts to compliance and technology availability |
| Key Challenges | Obstacles that every sector faces in the transition to digital servitisation | Digital transformation depends on improving cross-functional collaboration, modernising legacy systems and overcoming technology integration challenges | The differences are some groups focus more on modernising legacy systems, while others emphasise cross-functional alignment or specific technology integration challenges |
| Key Enablers | The factors driving the transition of digital servitisation efforts | All topics highlight the need to improve the customer experience and leadership in using technology as key factors | The focus on financial drivers varies, with some groups emphasising leadership while others highlighting customer engagement and technology |
| Digital Servitisation | The process of using digital technology to enhance service offerings | All topics focus on the strategic use of technology and the importance of developing internal processes for better impact | Differing approaches to prioritising technological development, while others highlight cybersecurity as a key concern |

| Theme | Theme Description | Similarities Description | Differences Description |
|---|---|---|---|
| Microfoundations for Digital Servitisation | The essential elements that support digital servitisation | Leadership and innovation, as well as modularity, are emphasised in all subject areas as crucial in driving the implementation of the transformation | Some groups focus more on control of technology, while others emphasise leadership and modularity in innovation for effective digital adoption |

Note: Author's own.

### 5.3 Research Question 2

"What are the interdependencies among different microfoundations? How do they affect the performance of digital servitisation? How does the combination of certain microfoundations affect the performance of digital servitisation?" (Chirumalla et al., 2023, p. 11).

This section addresses the themes associated with research question 2, which relates to the interdependencies of microfoundations and their influence on the performance of digital servitisation. The data analysis revealed seven themes, and one sub-theme, listed in Table 5.10 below.

**Table 5.10: RQ 2 Themes**

| **Theme** | **Similarities** | **Differences** |
|---|---|---|
| | Existing theme | New Sub-theme |
| Microfoundations | X | |
| Dynamic Capabilities | X | |
| Microfoundations for Transformation | X | |
| Digital Technology and Beyond | | X |
| Servitisation | X | |
| Microfoundations Interdependencies | X | |
| Microfoundations Performance Combinations | X | |
| Digital Servitisation Performance | X | |

Note: Author's own.

**Table 5.11: Themes, Topics and Frequency of Mention for RQ 2**

| | Financial Services Group | Telecommunication Group | Technology Enablement Group | Professional Services Group | Manufacturing Group |
|---|---|---|---|---|---|
| Microfoundations *Topics* | Many *Strategic Alignment and Execution* | Some *Leadership and Decision-Making* | Some *Leadership and Decision-Making* | Many *Leadership and Decision-Making* | *Few Strategic Alignment and Execution* |
| Dynamic Capabilities *Topics* | Some *Strategic Product Ownership* | Many *Technology Experience* | Some *Strategic Product Ownership* | Many *Technology Experience* | Few *Technology Experience* |
| Microfoundations for Transformation *Topics* | Some *Digital Transformation Beyond Technology* | Many *People, Process and Technology alignment* | Few *People, Process and Technology alignment* | Many *Digital Trans-formation Beyond Technology* | Few *People, Process and Technology alignment* |
| Servitisation *Topics* | Some *Market Competition and Innovation* | Some *Market Competition and Innovation* | Many *Consumer-centric Product Develop-ment* | Many *Market Competition and Innovation* | None |
| Microfoundations Interdependencies *Topics* | Many *Stakeholder Misalignment* | Many *Stakeholder Misalignment* | Some *Change Management* | Many *Change Management* | Few *Stakeholder Misalignment* |
| Microfoundations Performance Combinations *Topics* | Some *Metrics and Measurement Issues* | Many *Technology and Service Success Metric* | Some *Technology and Service Success Metric* | Some *Metrics and Measure-ment Issues* | Few *Technology and Service Success Metric* |
| Digital Servitisation Performance *Topics* | Some *Strategic Technology Investment* | Some *Strategic Technology Investment* | Many *Operational Efficiency* | Many *Operational Efficiency* | None |

Note: Author's own.

Table 5.11 summarises the frequency of mention of each topic discussed in the following analysis by theme and group. As already mentioned, it does not indicate the number of mentions but whether the mentions are many, some, or few/no mentions. It also indicates what topics are discussed and illustrated in each of the themes and represents the different patterns in the analysis. In addition, the theme summaries are incorporated at the beginning of each theme as a placemark.

### *5.3.1 RQ 2: Theme 6 – Microfoundations*

Based on Table 5.11 above, the discussion of the summary of Theme 6 is related to Research Question 2. The following table was prepared in the order of the themes by

group to organise the discussion. It is provided to orientate the reader for the following discussion.

**5.3.1.1 Evidence of microfoundations.** The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.12: Theme Summary**

| ***RQ 2 Theme 6 - Microfoundations*** |
|---|
| *Participant 2 "I think everything is connected to some degree. The art lies in seeing, knowing, and understanding what is meaningfully and impactfully connected, versus what is peripherally and incidentally connected."* |
| *Participant 9 "And partly, the way they have done certain things, I think, is in recognition of the need to spin out certain things that are going to take the organisation forward. So potentially to do, split out the explore versus exploit agenda and make peace that that thing needs to be funded differently."* |
| *Participant 11 "This really comes down to internal appetite. Every organisation has a risk appetite, a vision, and an ambition for how they want to appear in the marketplace. They make deliberate choices about which customer base or demographic they wish to serve, and this informs the services they offer."* |
| *Participant 7 "Together, we aim for business-led outcomes, which doesn't mean commercial alone—it means that commercial and IT teams, as part of the business, challenge everything together."* |
| *Participant 8 "The key is understanding what's happening externally and translating that into internal projects or initiatives that address real problems. In doing so, are we creating business value, or are we just changing things for the sake of it?"* |
| *Participant 12 "In some organisations, particularly in banking and the financial sector, the CIO is also the CTO and possibly the COO, which complicates project execution. For a CIO in a manufacturing company or a cellular operator like us, it's challenging to get projects done efficiently when they're surrounded by people in higher positions—like CFOs or sales leaders—who have no interest in IT projects."* |
| *Paricipant 3 "As a business, we're pretty good at embracing those kinds of suggestions. We have strict standards, of course, but when someone tries something new and shows us that it can be powerful, we always take a serious look at it."* |
| *Participant 6 ""Once you make a decision on the architecture and system you're going to build on, it's one of those decisions that gets executed over two or three years."* |
| *Participant 10 "So, it's a multifaceted approach: working off a lower cost base, providing a better service, and attracting and retaining customers."* |
| *Participant 1 "First and foremost, it's got to be buy in from the leadership perspective"* |
| *Participant 5 "Move from a linear business model to a platform-based one. The linear business itself was already fairly digital—it involved the delivery of information to real estate agents, banks, insurance companies, or the delivery of vehicle information, podium information, etc., all done digitally"* |
| *Participant 4 "As a result, the client doesn't always choose the best provider for their needs, and that's incredibly frustrating"* |

| *RQ 2 Theme 6 - Microfoundations* |
| --- |
| *Participant 131 "Nowadays, people want to work with modern systems, and they're not interested in joining a company to work on outdated technology, which is definitely an internal issue."* |

Note: Author's own.

**5.3.1.2 In-case and Cross-case Analysis of the Evidence. In-case:** The Financial Services group (blue) highlighted varying perspectives when discussing risk appetite, strategic decisions, and identifying critical relationships for expansion. Participant 2 focused on the differences between peripheral and key organisational relationships. From a risk management and business growth perspective, these insights highlight the different strategic priorities. Participant 9 provided insights into the trade-off between exploration and utilisation, pointing out that different areas must be funded and managed independently to drive future innovation. Participant 11 highlighted the importance of risk tolerance and market perception and explained how conscious decisions about customer focus shape the marketing strategy.

The Telecommunications group (orange) provided insights into project delivery, business value and teamwork. To achieve business-driven results, Participant 7 highlighted the importance of collaboration between business and IT teams. Participant 8 discussed the need to avoid change for change's sake and to align external trends with internal initiatives that create real business value. Participant 12 pointed out the difficulties in implementing projects, especially when chief information officers (CIOs) encounter resistance from executives with little interest in IT. The group emphasised that effective technology adoption requires cross-functional collaboration and the removal of organisational barriers.

The Technology Enablement group (yellow) discussed the long-term impact of architectural decisions and the company's openness to new ideas. Participant 3 highlighted that the company is open to new ideas if they meet its strict requirements. Participant 6 pointed out the long-term nature of architectural decisions, explaining that implementing a system takes several years after it has been selected.

The Professional Services group (pink) discussed the importance of customer dissatisfaction, business model transformation and leadership. Participant 1 highlighted that any strategic change requires leadership support. Customer disgruntlement at not being able to choose the best provider was raised by Participant 4, who pointed out the

need for an improved service offering and alignment with customer needs. Participant 5 spoke about the shift from a linear to a platform-based business model and emphasised the need to improve digital processes. Highlighting the importance of evolving the business model and leadership to drive digital transformation and address customer-centric issues.

The Manufacturing group (grey) highlighted employee retention and the applicability of technology. Participant 13 pointed out that people prefer to work with modern systems and are less inclined to join companies with outdated technology. The participant also mentioned the difficulty of attracting talent and highlighted the importance of keeping technology current to maintain a competitive operations advantage and attract talent.

**Cross-case:** The cross-case analysis shows that each group prioritises strategic decision-making and collaboration, even if their priorities differ. The Financial Services group emphasised the importance of balancing risk appetite, market perception, and managing key relationships, and it focused on trade-offs between innovation and operational efficiency. The Telecommunications group emphasised the need for collaboration between business and IT teams to align internal initiatives with external trends and ensure that technology adoption delivers real business value. The Technology Enablement group emphasised the long-term impact of architectural decisions and focused on implementing scalable systems and being open to new ideas while adhering to strict criteria. The Professional Services group emphasised leadership and customer centricity, focusing on transforming business models to improve digital processes and meet evolving customer needs. Finally, the Manufacturing industry group highlighted the importance of modern technology in attracting talent and maintaining a competitive advantage. Across all groups, the balance between technology deployment, business objectives and human capital emerged as a common theme essential for successful digital servitisation.

**5.3.1.3 Conclusion of Microfoundations.** The similarities illustrated in the groups highlighted strategic decision-making, leadership and the importance of coordinating technology initiatives with broader business objectives. The Professional Services group focused on business model transformation and executive buy-in in their digital services efforts. In contrast, the Financial Services group emphasised the value of strategic relationships and risk management. Both groups emphasised that solid leadership is necessary for effective transformation. Similarly, the Telecommunications group emphasised the importance of business and IT teams working together to align

technology initiatives with outcomes that align with business needs. The Technology Enablement group also emphasised strategic decision-making, focusing on long-term architectural decisions and encouraging innovation. Leadership and strategic direction were cited in all groups as critical factors for digital servitisation.

The differences were that each group faced different challenges and had a different operational focus. The Professional Services group dealt with internal customer satisfaction issues and the transition from linear to platform-based business models, while the Financial Services group focused on risk management and customer-centric market positioning. The Technology Enablement group focused on balancing innovation and long-term architecture planning, while the Telecommunications group struggled with project execution issues and executive resistance to IT initiatives. In contrast, the Manufacturing group expressed more significant concern for the workforce, pointing to the internal challenge of attracting talent due to outdated technology. Different operational priorities — from customer focus and project delivery to technological relevance highlight each sector's pressures.

### *5.3.2 RQ 2: Theme 7 – Dynamic Capabilities*

Based on Table 5.11 above, the discussion of the summary of Theme 7 is related to Research Question 2. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

**5.3.2.1 Evidence of Dynamic Capabilities.** The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.13: Theme Summary**

| ***RQ 2 Theme 7 – Dynamic Capabilities*** |
|---|
| *Participant 2 "The ability to blend our scanning of technology, human behavior, economics, and all these elements together to get a broader view is key. I wouldn't even say it's predictive—because nobody can predict the future—but it's about being more aware that if I push here, something might bulge over there, and it could be three levels of abstraction away."* |
| *Participant 9 "The Insurtechs and the Fintechs in our particular industry, right? Because then the talk would have been, if those guys are coming in with the new, they're able to almost create a frictionless experience from the start, and then how can you actually compete with them?"* |

| ***RQ 2 Theme 7 – Dynamic Capabilities*** |
|---|
| *Participant 11 "This previous position involved enabling the products and services that would eventually be released to customers, ensuring that the technology and systems supporting them were robust and efficient."* |
| *Participant 7 "The challenge is to align these external pressures with the internal realities of digital transformation, where technology is driving the industry towards more sophisticated, higher-value services."* |
| *Participant 8 "Several factors contribute to this, such as technology becoming more affordable and finding ways for organisations, like ours, to put it into the hands of consumers—what I refer to as the 'consumerisation' of technology."* |
| *Participant 12 "This has enabled new products and services that allow us to scale our service management to many more customers—potentially 10, 20, or even 100 times more than before."* |
| *Participant 3 "Recently, we've been trying to become a more product-centered business. It's been a tricky transition, and we're still in the early stages of making that shift."* |
| *Participant 6 "It became a question of what else we could transform in the business, within the digital realm, that would give our clients access to a broader range of services."* |
| *Participant 10 "From a customer experience perspective, I've briefly touched on this before, but it's essential to consider: What does that experience feel like? The main business drivers for customers vary depending on the demographic or LSM (Living Standards Measure) group you're targeting. For instance, a younger audience might prioritise speed, aesthetics, and app intuitiveness. How fast is it? How sleek does it look? Is the platform intuitive and providing the right feedback?"* |
| *Participant 1 "Best examples of where you are leading a disruption, not always successful, but what it does do is it shakes out the industry. And if you shaken up the industry, you very likely to start pulling."* |
| *Participant 4 "That challenge, however, also presents a service opportunity. We can provide smart solutions in this space to ensure that security doesn't become a negative but instead becomes a positive aspect of our digital transformation efforts."* |
| *Participant 5 "There's also this notion of being "digital first" for the reasons we've mentioned before. Digital first means not thinking in the old ways, but adopting new methods. That concept seems to be driven largely by the suppliers of tools and services that enable digitisation. I think there's a big push from these providers to move people in that direction."* |
| *Participant 13 "They keep saying they can build a digital twin in the background, but I'm not exactly sure what that means."* |

Note: Author's own.

**5.3.2.2 In-case and Cross-case Analysis of the Evidence. In-case:** The Financial Services group (blue) held different perspectives. Participant 2 spoke about the need to integrate insights from economics, human behaviour and technology to predict changes in the industry. Insurtechs and FinTechs are becoming more competitive, according to Participant 9, who also highlighted how these companies are

pushing traditional financial institutions to innovate by providing frictionless customer experiences from the outset. The importance of a robust technology infrastructure was underscored by Participant 11, who emphasised the need for well-designed systems that effectively support customer-centric goods and services. The participants highlighted the importance of focusing on the requirements for robust internal systems and the external competitive environment.

The Telecommunications group (orange) discussed the dynamics between internal realities and external pressure. The difficulty of reconciling these elements with digital transformation as technology evolves and the market moves towards more complex services was raised by Participant 7. Participant 8 pointed out that technology has become more affordable and more accessible for consumers to access and use, a process known as "consumerisation". Participant 12 described how the scaling of service management had been enabled by digital transformation, allowing them to scale their services by tens to hundreds of times and manage a much larger customer base.

The Technology Enablement group (yellow) talked about how they are starting to focus more on customer experiences and product-centred strategies. Participant 3 highlighted the difficulties of transitioning to a more product-centric company and said the company is still in the early stages of this transition. Participant 6 focused on increasing the scope of services available to customers. Participant 10 noted that different demographic groups have primary business drivers. For example, younger customers underscore speed, aesthetics and user-friendly interfaces when interacting with digital platforms.

The Professional Services group (pink) spoke about digital transformation, disruption and the transition to digital-first strategies. Participant 1 highlighted that while disruption is not always practical, it often forces change in the industry and establishes the company as a pioneer. Participant 4 noted that challenges – especially those related to security – could be turned into opportunities for services if security is made a strength of digital transformation through clever solutions. Participant 5 underscored the concept of "digital first'," which is about embracing new techniques rather than relying on conventional practices and noting that providers of digital tools and service providers are primarily driving this change.

The Manufacturing group (grey) spoke of a certain unpredictability regarding new technologies. Participant 13 raised the “digital twin” concept and expressed uncertainty

about its definition and use. Highlighting that the company needs a better-defined strategic alignment between operational knowledge and technology offerings.

**Cross-case:** In response to the competitive threat faced by FinTech and InsurTech companies, the Financial Services group emphasised the importance of robust internal systems. The Telecommunications group highlighted the need to balance internal realities and external digital pressures to meet the demands of a growing customer base and the increasing accessibility of technology. While the Professional Services group focused on turning barriers such as security into service opportunities and pursuing a digital-first strategy, the Technology Enablement group is moving to a product-centric approach that prioritises the customer experience but struggles with the complexity of change. The Manufacturing group underscored the need for better alignment between operational processes and technology and highlighted the uncertainty surrounding novel technological concepts such as digital twins. The analysis shows how the different sectors manage digital transformation by balancing internal capabilities and external pressures. This highlights the aligning of customer-centric strategies with evolving technology, underpinned by the need for strategic planning and flexibility.

**5.3.2.3 Conclusion of Dynamic Capabilities.** The similarity is the challenge to balance internal technology capabilities with external market pressures and customer expectations. The Financial Services group mentioned that FinTechs and InsurTechs put them under competitive pressure to innovate their customer offerings. The Telecommunications group also pointed out that the market is driving faster and more affordable technology adoption and that this is "consumer-driven". The Technology Enablement and Professional Services groups emphasised the strategic need to move to customer and product-centric models and focus on digital-first strategies to adapt to changing customer demands. Technology must adapt closely to external conditions to remain competitive and dynamic.

However, the differences were that all groups had different operational priorities. The Financial Services group focused on developing a robust internal infrastructure to maintain its market position. At the same time, the Telecommunications group sought to scale service management to serve a much larger customer base. In the early stages of its product-led transition, the Technology Enablement group focused on balancing the changing needs of its demographic segments and the customer experience. In contrast, the Professional Services group focused on the importance of digital-first strategies and security challenges. It explored the opportunity to leverage these challenges to improve

its market position through service offerings. The Manufacturing group was characterised by a clear focus, emphasising the unpredictability of new technologies and suggesting that operational processes and technological advances need to be better aligned.

### *5.3.3 RQ 2: Theme 8 – Microfoundations for Transformation*

Based on Table 5.11 above, the discussion of the summary of Theme 8 is related to Research Question 2. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

**5.3.3.1 Evidence of Microfoundations for Transformation.** The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.14: Theme Summary**

| ***RQ 2 Theme 8 – Microfoundations for Transformation*** |
|---|
| *Participant 2 "Essentially, they are transitioning from being a physical bank to a digital bank, not through complex strategies or over-engineered IT projects, but by focusing on consumer education and ease of use."* |
| *Participant 9 "The rewards offering that my organisation has is fully digital. There's no card or anything like that, so it's a total end-to-end digital experience—redemption, earn."* |
| *Participant 11 "The bottom line is that the organisation strives to create platforms where customers can transact and self-serve. This has become particularly important post-COVID-19, as digital literacy has surged."* |
| *Participant 7 "This evolution in the call centre industry shows how digital transformation isn't just about reducing jobs but also about shifting the nature of the roles and the skill sets required."* |
| *Participant 8 "It's no longer just about reducing costs but about leveraging technology to create external-facing benefits. In the past, organisations often separated internal processes from external ones, but today, technology allows for a more homogenous, seamless experience, optimising everything end-to-end."* |
| *Participant 12 "Then there's the monetisation of what we refer to as digitalisation of the rest of the value chain. For instance, digitalisation of the home, which is about giving customers more reasons to consume. This includes digital lifestyle services, advertising, video on demand, streaming, and the like."* |
| *Participant 3 "If we decide to switch cloud providers in the future, those tools will allow for an easier transition since we'll already have the necessary skills. However, using multiple tools together is still necessary to enable the full range of features we want."* |

| ***RQ 2 Theme 8 – Microfoundations for Transformation*** |
|---|
| *Participant 6 "The problem was that the platform wasn't fully developed, and in fact, it's only been fully completed about six months ago."* |
| *Participant 10 "This involves digging deeper into the resources available within the organisation, particularly the people aspect. A major consideration is Do we have the necessary skills within the organisation to support the chosen technology? And by support, I mean from a service management and service delivery perspective, which is critical."* |
| *Participant 4 "Over the years, I've become very familiar with digital technologies and services, and I understand the benefits to the customer when you provide them with a managed service that includes digital transformation. In my view, when you're a managed service provider, you are strategic to the customer. You're helping them transform, taking them on a journey, and offering predictability, which enhances the customer experience. Whatever service you provide must improve that customer experience."* |
| *Participant 5 "I have no doubt that digitisation of services is the way of the future. Well, I mean, we were already doing this in the 90s, just in different forms. So it's not something entirely new. The difference now is the pace at which it's happening—it's much quicker."* |
| *Participant 13 "In terms of IoT, that's a buzzword here. Some senior managers have been dropping it more and more in meetings, asking how we can use it to get smarter."* |

Note: Author's own.

**5.3.3.2 In-case and Cross-case Analysis of the Evidence. In-case:** The in-case analysis for the Financial Services group (blue) highlighted simplification and customer empowerment when assessing the broader impact of digital transformation beyond technology. Participant 2 underlined that the organisation stresses usability and consumer education more when transforming into a digital bank rather than relying on complicated IT projects. Participant 9 described a rewards programme that is completely digital, end-to-end and without any physical components. Participant 11 mentioned that increasing digital literacy post-COVID-19 has fuelled the proliferation of self-service platforms.

The Telecommunications group (orange) highlighted the coordination of people, processes and technology in the digital transformation. Participant 7 highlighted how evolving skills are reshaping roles, particularly in industries such as call centres. Participant 8 focused on the shift from internal cost reductions to creating seamless, end-to-end customer experiences. Participant 12 discussed monetising digital services such as video-on-demand to improve the value chain and emphasised the importance of quickly adopting and modifying new digital services to remain competitive. Technology is seen as a tool and a driving force for creating new roles, processes, and business

models, emphasising the far-reaching impact of digital transformation beyond technology, which creates external value for customers.

The Technology Enablement group (yellow) provided perspectives on the skills and capabilities required for technology adoption and the need for organisational alignment. Participant 3 spoke about the impending move to cloud providers and emphasised the value of internal capabilities that have already been developed, but also recognised that multiple tools are required for full functionality. Participant 6 highlighted the delays in developing the platform, pointing out the internal misalignment. Participant 10 highlighted the need to evaluate internal resources, particularly staff and skills, to improve efficient service management and support for the selected technology. This underscores the importance of technological readiness and skilled personnel managing digital platforms effectively.

The Professional Services group (pink) highlighted key aspects of digital transformation that go beyond innovation, agility and technology. Participant 4 emphasised the need for the organisation to be strategic partners that support customer change while delivering predictable, improved outcomes and focused on the role of digital technologies in improving the customer experience. While digitalisation has long been part of business operations, Participant 5 reflected on the broader evolution, noting that the significant change now is the acceleration in the pace at which it is happening, leading to a faster transformation of the whole landscape. The customer focus and speed of transformation underscored how digital innovation is moving beyond technology and radically changing business models and service delivery.

The Manufacturing group (grey), Participant 13, noted that the Internet of Things (IoT) has become a "buzzword" in management discussions, reflecting the growing interest in using the IoT for more innovative, more efficient operations. This shift emphasises the company's focus on using connected systems to improve flexibility and operational intelligence as part of digital transformation.

**Cross-case:** The Financial Services group focuses on simplifying the customer journey through enhanced digital expertise, emphasising ease of use, customer education and seamless digital services rather than relying on complex IT systems. The Telecommunications group emphasises aligning people, processes, and technology to create customer-centric experiences, agility, and innovation for rapid market adaptation and value creation. The Technology Enablement group emphasises the need for strong

internal capabilities to manage evolving digital platforms, highlighting the challenges of aligning resources with technology requirements and the importance of long-term planning. The Professional Services group focuses on innovation and agility, highlighting how digital transformation reshapes customer experiences and service models while positioning itself as a strategic partner for customer success. Finally, the Manufacturing group explores the potential of the IoT to improve operational intelligence and agility, focusing on trends in technology adoption and integrated business models.

**5.3.3.3 Conclusion of Microfoundations for Transformation.** Every group's similarity is that digital transformation significantly changes business models, customer interactions and operational processes and goes beyond the mere implementation of new technologies. Improved services and customer-centric strategies are the main drivers of this transformation that unites the groups. The financial services and telecoms sectors have a common focus: customer enablement, which is the bringing together of people, processes, and technology to create seamless, end-to-end customer experiences. The Technology Enablement and Professional Services groups also emphasise the importance of flexibility and creativity and the need for solid internal resources to meet changing market requirements and customer expectations. The 'Digital Transformation Beyond Technology' topic emphasises that transformation is not just about changing systems but about reshaping the entire business environment. Each group highlights that developing new capabilities, deploying innovative strategies and driving internal and external value creation are critical to success in this dynamic space. This emphasis on adaptability ensures that stakeholders feel prepared for the challenges and opportunities of digital transformation.

The differences are illustrated through the Telecommunications group, which is more concerned with monetising digital services and reorganising internal roles, and the Financial Services group, which is focused on educating users and optimising the digital experience. The Professional Services group emphasises being a strategic partner and reacting quickly to market changes. In contrast, the Technology Enablement group emphasises internal capabilities and long-term planning for managing digital platforms. While the other groups tend to discuss customer-centric innovation, the Manufacturing group pursues a different strategy and focuses on the IoT to improve operational intelligence and agility.

### *5.3.4 RQ 2: Theme 9 – Servitisation*

Based on Table 5.11 above, the discussion of the summary of Theme 9 is related to Research Question 2. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

**5.3.4.1 Evidence of Servitisation.** The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.15: Theme Summary**

| ***RQ 2 Theme 9 – Servitisation*** |
|---|
| *Participant 2 "It was the perfect storm for them—consumer need, good product development, and I believe a large part of their success was due to their execution discipline, both in starting and stopping projects."* |
| *Participant 9 "There are providers out there that are giving you this point-of-sale device, like a very phone device right there connecting. There are third party vendors that allow you to almost be a merchant in an informal market."* |
| *Participant 11 "I am currently in a customer-facing role where my team and I are responsible for delivering and building products for consumer use at home."* |
| *Participant 7 "The South African accent is considered neutral and well-suited for servicing English-speaking countries like the US, UK, and Australia. Consequently, there is a growing expectation that the call centre industry could expand, benefiting from South Africa's geographic and economic position."* |
| *Participant 8 "Secondly, you need to keep an eye on the opportunities these innovations unlock. Sometimes, that means exploring new markets or even pivoting your business."* |
| *Participant 12 "Companies will either have these tools or be left behind."* |
| *Participant 3 "One of the key things we've done is take one of our oldest products and revamp it as a Software-as-a-Service (SaaS) offering. It's now multi-tenanted, and that's been quite a journey."* |
| *Participant 6 It's really about the fact that, within a growth sphere, once you're operating at a high market share level, it becomes a question of, "What else could we be doing? What else could we be offering our clients within the digital realm?"* |
| *Participant 10 "While price does play a role—particularly in today's economic climate—experience remains a key differentiator. Many customers are still willing to pay more for a better, seamless user experience."* |
| *Participant 4 "Unfortunately, our competitors are already ahead of us."* |
| *Participant 5 "In any digital service delivery, the goal must be to enhance the relationships people have with their network, whether that's customers, suppliers, or others. We should be facilitating that process. And it doesn't really matter if you're a platform or a linear business—the key is to start with the customer in mind and solve for their problem."* |

Note: Author's own.

**5.3.4.2 In-case and Cross-case Analysis of the Evidence. In-case:** In the in-case analysis, the participants from the Financial Services group (blue) provided a range of perspectives on the modernisation and development of consumer-oriented products. On product modernisation, Participant 2 spoke about how meeting customer needs and maintaining a rigorous execution discipline are critical factors in the success of some products. In modernising how businesses transact, Participant 9 focused on the informal market and how third-party providers offer point of sale devices, aligning with consumer-centric product development. Participant 11 stated that consumer-facing product development is part of his role in developing home-use products.

Participants in the Telecommunications group (orange) had different opinions on innovation and competition in the industry. According to participant 7, South Africa's neutral accent puts the country in a good position for the growing call centre sector, which could serve English-speaking nations such as the United States, United Kingdom, and Australia. This could open up opportunities due to South Africa's geographical and economic advantages. Participant 8 noted that companies may need to reorient themselves to adapt and emphasised the importance of looking for new market opportunities created by innovation. Participant 12 emphasised the importance of adopting new tools and technologies and warned that companies risk falling behind without them.

The participants in the Technology Enablement group (yellow) talked about consumer-oriented product development and product modernisation. Participant 3 described how a significant step towards product modernisation was taken when one of the company's first products was transformed into a Software-as-a-Service (SaaS) offering. Participant 6 expressed the company's continued desire for innovation and product expansion in the digital space by focusing on what more it could offer, especially given its significant market share. Participant 10 pointed out that in the current competitive economic climate, many customers are willing to pay more for seamless experiences, so customer experience is becoming a key differentiator.

The Professional Services group (pink) discussed consumer-orientated product development and market competition. Participant 4 noted the need to address product modernisation and competitive positioning and expressed concern about competitors' early market advantages. Participant 5 emphasised that improving people's relationships with their networks — suppliers, customers or others — should be the main objective of

providing digital services, highlighting the importance of the company's responsibility to solve the customer's problem.

**Cross-case:** The groups highlighted the views on important topics such as market competition, innovation, consumer-oriented product development and modernisation. The Financial Services group focused on product modernisation to adapt to customer needs while recognising the importance of third-party providers in the informal market and the discipline of execution. The Telecommunications group spoke about how competitive South Africa is in the global call centre market and the importance of exploring new markets and adapting to innovation. They also warned that companies need to adopt new tools. The Technology Enablement group highlighted that frictionless customer experiences are increasingly becoming a key differentiator in a competitive market and pointed to the trend towards modernising legacy products, particularly through SaaS offerings. The Professional Services group underlined the importance of adopting a competitive mindset, prioritising the development of customer relationships and emphasising the role of problem-solving in digital services. The perspectives show how market competition and digital transformation drive demand for consumer-centric innovation and product development across all industries.

**5.3.4.3 Conclusion of Servitisation.** There are similarities between all groups in how digital transformation focuses on market competitiveness, customer-centric development and product modernisation. The groups recognise the importance of aligning strategies with customer needs. The Financial Services and Technology Enablement groups share the focus on product modernisation through software-as-a-service offerings or streamlining customer transactions. Both groups underscore how digitalisation can increase customer loyalty, maximise the product offering, and see the customer experience as a critical point of differentiation. There is competition in the market, which is recognised by the Professional Services group and the Telecommunications group. Both recognise the need for innovation and adaptation; Professional Services (pink) addresses the need to solve customer problems and improve relationships with suppliers and customers, while the Telecommunications group explores global opportunities.

However, the approaches the two groups take to address these issues are different. While the Telecommunications group focuses on leveraging geographic advantages in the call centre industry and adapting to global market demands, the Financial Services group underscores execution discipline and the role of the informal market in product

modernisation. The Technology Enablement group is focused on maintaining its market share through seamless user experiences and is more interested in internal innovation and the growth of its digital products. On the other hand, the Professional Services group focuses more on delivering solutions that directly address customers' problems and the competitive pressure to keep up with market leaders, regardless of organisational structure. These differences highlight the different goals each industry is pursuing as it navigates the more extensive terrain of digital transformation.

### *5.3.5 RQ 2: Theme 10 – Microfoundations Interdependencies*

Based on Table 5.11 above, the discussion of the summary of Theme 10 is related to Research Question 2. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

**5.3.5.1 Evidence of Microfoundations Interdependencies.** The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.16: Theme Summary**

| ***RQ 2 Theme 10 – Microfoundations Interdependencies*** |
|---|
| *Participant 2 "It's about translation—learning to speak a different language and translating your science into that language. If we can get that communication to be coherent, people will feel more confident and empowered to make good decisions, and we will create fewer of these functional gaps."* |
| *Participant 9 "So I'm seeing a real need for the coming together between the business, the tech, the translation, to be able to, I think, give effect to, as I said, the silver bullet and promise that we've heard about for a long time."* |
| *Participant 11 "Guiding principles are crucial as well, as they influence decision-making processes, especially at the implementation level."* |
| *Participant 7 These are two significant challenges that leadership and organisations must navigate—balancing the need for shareholder returns, people management, and profitability, while also addressing employees' concerns about the impact of technology on their careers."* |
| *Participant 8. "However, to achieve that, there must be a coherent strategy in place, ensuring that everything you're doing internally translates effectively to your customers and external stakeholders."* |
| *Participant 12 "Many projects, especially proofs of concept, never make it into production.*<br>*It's not hard to get the budget. You're driving savings, better customer experience, better automation, and so on. But whether AI will succeed or not, I think, comes down to the end-user adoption."* |

| *RQ 2 Theme 10 – Microfoundations Interdependencies* |
|---|
| *Participant 3 "The key benefit is that when a new customer comes on board and needs a specific feature, we develop it, and it becomes part of the product for all clients—current and future."* |
| *Participant 6 "We'll gain insights into how our clients engage with the platform—what drives their actions, what makes them click on a button or not, and what the right call to action is."* |
| *Participant 10. "Well, looking at the other side now, once again, from an internal perspective, many system integrators—and I use the term broadly to include banks—face similar challenges. A common misconception is that banks sell money. In reality, banks sell an experience. Their marketable commodity may be money or financing, but the underlying technology is what enables people to engage in transactions, whether for long-term loans or immediate cash needs."* |
| *Participant 4 "There's a huge change that happens, and we even see it internally here. When you move from being a reactive service provider to becoming a more proactive one, the people factor immediately becomes a challenge."* |
| *Participant 5 "The process must begin with truly understanding what the customer wants, unless you're aiming to be highly innovative and take risks—then go ahead and build the 'car,' so to speak, without asking for a 'faster horse,' if you know what I mean."* |
| *Participant 13 "I think the organisation probably says it's very pro-digital, but in reality, I don't think we are. I think we're a bit behind and a bit archaic."* |

Note: Author's own.

**5.3.5.2 In-case and Cross-case Analysis of the Evidence. In-case:** In the Financial Services group (blue), Participant 2 highlighted the importance of translating complex concepts into understandable language and pointed out the need for stakeholder coordination. Fewer functional gaps and better communication allow stakeholders to make more informed decisions. Similarly, Participant 9 highlighted the need for alignment, stating that business and technology teams need to join forces to realise long-awaited technological promises. In addition, Participant 11 mentioned that guiding principles are essential for change management as they influence implementation decisions. Illustrating the importance of communication, alignment and a clearly defined framework for operational success.

In the Telecommunications group (orange), Participant 7 pointed out the disconnect between stakeholders and stressed the difficulty of reconciling shareholders' demands and employees' concerns about how technology will affect their careers. Participant 8 highlighted change management, the link between internal operations and market-driven outcomes, and the importance of a coherent internal strategy that addresses customers and external stakeholders. Participant 12 discussed the category of operational efficiency and automation, highlighting the securing of funding for AI and automation

projects is relatively easy. The real difficulty lies in securing end-user acceptance, which ultimately determines the success of the technology.

The Technology Enablement group (yellow) emphasised consumer-centric product development. Participant 3 explained how the functions developed for a customer flow into the product and thus offer current and future customers benefits. By adapting to the customer's needs, this method promotes continuous development. Participant 6, in his discussion on operational efficiency and automation, focused on customer behaviour and optimising customer engagement through appropriate calls to action, highlighting the use of platform insights to understand customer behaviour. Participant 10, when comparing system integrators, including banks, emphasised that the real product is the customer experience, not the financial service itself. This insight relates to competition and innovation in the market. By highlighting how this defines market differentiation, customers can effectively interact with banks thanks to the underlying technology.

The Professional Services group (pink) highlighted the importance of change management. Participant 4 emphasised the significant internal change when a company moves from reactive to proactive service provision. As a change in perspective and more strategic, forward-thinking methods are required, this transition often brings difficulties in people management. Participant 5 emphasised the importance of understanding customers' needs first and then developing solutions. This approach is known as consumer-centred product development, noting the balance between customer-centricity and the pursuit of market-leading innovation. This acknowledges that innovation sometimes requires taking risks and developing breakthrough solutions without direct customer input.

Participant 13 from the Manufacturing group (grey) pointed out the need for stakeholder coordination. Although the company explicitly supports digitalisation, it must catch up in actual implementation. This mismatch between vision and implementation reflects the sluggish introduction of digitalisation.

**Cross-case:** Digital transformation drives consumer-centric innovation, manages change effectively, and harmonises all stakeholders. The Financial Services group emphasised that clear communication and stakeholder coordination are essential to close functional gaps and ensure technology delivers on long-awaited promises. Similarly, the Telecommunications group underlined that internal alignment is essential for market-driven outcomes and that aligning employee concerns and shareholder

expectations can be difficult. Both groups emphasised that end-user acceptance — and not just funding — is a critical factor in the success of automation and AI. Customer experience has emerged as the critical differentiator in the Technology Enablement group. Customer needs and continuous feature updates drive product development to ensure relevance and market competitiveness. The Professional Services group focused on customer-centric solutions and the need to innovate to be agile when discussing the transition from reactive to proactive services. In the Manufacturing group, there was a disconnect between the company's stated goals and actual progress in digitalisation. This illustrates many organisations' general difficulties in achieving their digital transformation goals.

**5.3.5.3 Conclusion of Servitisation for Microfoundations Inter-dependencies.** The group's similarities indicated the importance of efficient change management and stakeholder coordination as key elements of digital transformation. Strategic alignment is crucial for all companies, whether it's aligning the Telecommunications group's internal operations with shareholder requirements or bringing together the Financial Services group's business and technology teams. A common goal cited by the Technology Enablement and Professional Services groups was consumer-focused product development, emphasising the need to innovate and meet customer needs constantly. In addition, several groups emphasised the importance of end-user adoption for the success of new technologies, including automation, Artificial Intelligence and modernised digital platforms, highlighting the importance of user experience in digital transformation. Each group recognises that digital transformation requires a comprehensive strategy that considers people, processes, and market realities alongside technology.

However, the differences between the groups lie in how differently they focus on operations. Unlike the Telecommunications group, which emphasised the need to balance the needs of internal and external stakeholders, especially in the face of market pressures, the Financial Services group focused more on streamlining communications and delivering on long-standing technology promises. The Professional Services group, on the other hand, focused on the internal transition from reactive to proactive service provision. In contrast, the Technology Enablement group emphasised the need for continuous product development to remain competitive. Compared to the other sectors that have already introduced more advanced digital strategies, a difference in the pace of transformation was evident. The Manufacturing group stood out because it faced a more fundamental challenge: balancing digital aspirations with actual implementation.

### *5.3.6 RQ 2: Theme 11 – Microfoundations Performance Combinations*

Based on Table 5.11 above, the discussion of the summary of Theme 11 is related to Research Question 2. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

**5.3.6.1 Evidence of Microfoundations Performance Combinations.** The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.17: Theme Summary**

| ***RQ 2 Theme 11 – Microfoundations Performance Combinations*** |
|---|
| *Participant 2 "I think human behavior, technology, and economics all play a role. Usually, it's some form of drive, desire for change, or asset that spurs adoption."* |
| *Participant 9 "I don't think they're doing it well, but I think they see that there's a need. At the moment, people think that if I set up more reporting mechanisms, it forces people to do more. I don't know where that crazy thinking has come from, but that is where we are at the moment."* |
| *Participant 11 "Even if you're in the same industry as others, your roadmap may differ, influencing how you operate and how you prioritise investments."* |
| *Participant 7 "In a South African context, external factors such as macroeconomic conditions and labour cost structures play a significant role."* |
| *Participant 8 "Many organisations are moving towards this integrated engagement model, where technology plays a central role in improving customer interactions. In today's world, where businesses are transitioning from merely selling products to delivering services, the way organisations engage with customers becomes critical in differentiating themselves from competitors. Harnessing these technologies effectively can significantly enhance how businesses communicate and build relationships with their customers."* |
| *Participant 12 "First, there have been considerable cost savings—hundreds of millions, if not billions of rand—from productivity-related savings and the introduction of things like chatbots. This has impacted thousands of frontline employees, particularly in call centres."* |
| *Participant 6 "It's been an endeavour that hasn't really proven its value yet, even though we're five years down the line."* |
| *Participant 10 "This highlights the internal need for flexibility and the ongoing challenge of ensuring the business case supports the ROI."* |
| *Participant 1 "In some instances, it was pure cost optimisation and, you know, realigning the organisation to what at that time was the requirement from an ecosystem, environment, or whatever you want to call it."* |

| *RQ 2 Theme 11 – Microfoundations Performance Combinations* |
| --- |
| *Participant 4 "When you provide a service to a customer, there's a lot of talk about outsourcing, cost-saving, and efficiency. Yes, you measure those things—bringing costs down, speeding up processes—but customer experience is the key outcome to measure. And that comes down to predictability."* |
| *Participant 5 "Shareholders and other external stakeholders, including customers, are likely looking at it in the same way. They want to use the service, but they want it to be as cheap as possible while still offering as much value as it can. It's about delivering the most value for the least cost."* |

Note: Author's own.

**5.3.6.2 In-case and Cross-case Analysis of the Evidence. In-case:** The Financial Services group (blue) is aware of the complicated relationship between human behaviour, the economy as a driving force and the measures of success for technology and services. Participant 2 emphasised that technology, human behaviour and economics are the main drivers of new technology adoption, noting that this process is driven by people's desire for change or certain benefits. Participant 9 raised the issue of ineffective implementation, although the need for reporting and measuring success was recognised. Participant 11 pointed out the differences in methodologies, even within the same sector, that impact how organisations prioritise their investments and plan their roadmaps—indicating how economic forces influence change links with the economics category as a driving force.

The Telecommunications group (orange) looked at the metrics of success for technology and services and the role of the economy as a driving force. Participant 7 described how external economic forces influence business models and decisions in the South African context, pointing to macroeconomic conditions and the structure of labour costs as crucial drivers of change in the industry. In line with the success criteria for technology and service, Participant 8 discussed how technology shapes customer interaction models and emphasised the importance of technology today in enhancing customer relationships and differentiating from the competition. Participant 12, who spoke about cost optimisation, highlighted the significant financial benefits of using chatbots and other productivity-enhancing technologies. However, these cost savings come at the expense of jobs, particularly for call centre staff. This emphasises the fine line that needs to be drawn between efficiency and the impact on the entire workforce and how the introduction of technology changes both costs and operations.

The Technology Enablement group (yellow) highlighted the problems associated with measurement and metrics, particularly the difficulty of demonstrating the long-term benefits of technology projects. Participant 6 pointed out that the project has not yet produced tangible results after five years of work. This suggests that aligning the success metrics for technology and services with expectations is difficult. Participant 10 emphasised the importance of maintaining flexibility and ensuring that the business case underpins the return on investment (ROI). This highlights the ongoing challenge of balancing cost optimisation with the pragmatic benefits of technological advancement.

The Professional Services group (pink) emphasised the balance between cost optimisation and value creation. Participant 1 talked about how the business has been realigned in response to environmental or ecosystem demands and emphasised the critical role of cost optimisation in adapting to external pressures. Participant 4 discussed the importance of metrics and measures, pointing out that while cost savings and efficiency are essential, the ultimate success metric is customer experience, particularly when ensuring predictability of service delivery. Participant 5 stressed the expectations of shareholders and stakeholders who want maximum value at the lowest cost and pointed out that the focus is on delivering efficient, cost-effective services. The group's views demonstrate the tension between managing costs and maintaining high service standards.

**Cross-case:** The cross-case analysis shows that all groups find the balance between technology adoption, business drivers and metrics to measure success. The Financial Services group emphasised the role of human behaviour and economic forces in technology adoption while struggling with the challenges of effective reporting and aligning success metrics with productivity. The Telecommunications group highlighted how external economic conditions, such as macroeconomic factors and labour costs, influence business decisions while acknowledging the importance of technology in improving customer relationships. However, they pointed out the trade-off between optimising costs through tools such as chatbots and the impact on the workforce. The Technology Enablement group expressed concern about the difficulties in demonstrating the long-term benefits of technology projects and emphasised the importance of flexibility and ensuring that the business case justifies the ROI. Finally, the Professional Services group focused on cost optimisation and value creation, stressing that while cost savings are critical, customer experience remains the key measure of success as stakeholders expect maximum benefit at the lowest cost. A common theme across the groups is the

tension between managing costs, demonstrating clear success metrics and maintaining high service standards in a changing economic and technological environment.

**5.3.6.3 Conclusion of Microfoundations Performance Combinations.** The groups' similarities emphasise the importance of linking technology implementation to performance metrics and aligning these with attempts to reduce expenditure. The Financial Services and Telecommunications groups recognise that technology adoption is driven by an interplay of economic factors, human behaviour and the need for efficiency. These groups also recognise the role technology, including automation and customer engagement platforms, and cost optimisation play in driving operational efficiency. Each group recognises the importance of cost optimisation, notably when overseeing technology spending and customer-facing projects. As organisations across all industries struggle to define success in a digitally transformed world, there is a clear focus on technology and service success metrics.

While all groups recognise the value of metrics, the differences are in how the groups differ in quantifying metrics and results. The groups looking at Financial services and Telecommunications emphasise the economy as a driving force and examine how human behaviour, industry competition and macroeconomic conditions impact the adoption and success of new technologies. On the other hand, the Technology Enablement group focuses on the challenges of proving ROI after years of investment in technology projects. The groups also emphasise the difficulty of achieving long-term success metrics. On the other hand, the Professional Services group prioritises value creation over cost optimisation and considers the customer experience the most crucial performance indicator. This contrasts with the groups' more operational and technology-orientated views and illustrates that the Professional Services group is keen to maintain high service standards despite external pressure.

### *5.3.7 RQ 2: Theme 12 – Digital Servitisation Performance*

Based on Table 5.11 above, the discussion of the summary of Theme 12 is related to Research Question 2. The following table was prepared in the order of the themes by group to organise the discussion. It is provided to orientate the reader for the following discussion.

**5.3.7.1 Evidence of Digital Servitisation Performance.** The below are verbatim quotations from the participants that illustrate the key topics that are discussed further below.

**Table 5.18: Theme Summary**

| ***RQ 2 Theme 12 – Digital Servitisation Performance*** |
|---|
| *Participant 2 "What I've seen is organisations that have gone so far down the road that they just keep throwing good money after bad because they want to finish."* |
| *Participant 2 "They won't stop because the calculation is always, "But we've already invested so much."* |
| *Participant 9 "So that balancing act. And so, I think that people's ability to cut and become more efficient in the right space, while not becoming too lean that you forget about the new skills of building in the right place, has become important."* |
| *Participant 7 "In the end, we spent over three times the budget, slowed down the business, and failed to achieve the intended outcomes. We're still running that legacy system after all these years because we haven't been able to fully migrate it."* |
| *Participant 8 "I see this from two perspectives. Firstly, you need to be acutely aware of what's happening in your space, understand the broader landscape, and decide which technological advancements you should incorporate into your organisation. This process involves translating that technology into tangible value and reshaping your business continuously."* |
| *Participant 12 "In terms of reporting, tasks that used to take a month can now be done in 15 minutes. This allows us to provide real-time reporting and deliver a premium level of service to customers, which is something we can monetise."* |
| *Participant 3 "This has been a fantastic development for our business, and it also reduces the risk associated with maintaining the product."* |
| *Participant 3 "From a cloud enablement perspective, our downtime has also significantly reduced. We still need to do infrastructure maintenance, but we've reduced that schedule to bi-annual updates, as the technology isn't moving as fast anymore."* |
| *Participant 6 "This provided the perfect opportunity internally to review what was already there and assess how we needed to transform it into a platform that was modular."* |
| *Participant 1 "One is to optimise the way that you're running your business from an end-to-end perspective."* |
| *Participant 5 "The question became, how do we monetise our other asset, which was the large number of users we had across these separate systems?"* |
| *Participant 5 "We haven't seen the revenue lift that we initially expected because we haven't fully exploited the opportunities we set out to address."* |

Note: Author's own.

**5.3.7.2 In-case and Cross-case Analysis of the Evidence. In-case:** For the Financial Services group (blue), the issue is both financial mismanagement and operational efficiency. Participant 2 pointed to the challenge of financial mismanagement, where organisations continue to invest in failing projects due to the sunk cost fallacy — they have already invested too much to stop even when it is no longer profitable, indicating poor financial decision-making in long-term digital

transformation investments. Participant 9 pointed to the delicate balancing act of becoming leaner without cutting so much that innovation and the development of new capabilities suffer and emphasised the challenge of maintaining operational efficiency while managing costs and investment effectively.

The Telecommunications group (orange) emphasised operational efficiency, strategic technology investment and financial mismanagement. Participant 7 raised the issue of financial mismanagement, describing how the company invested three times the allocated funds in a project that hindered operations and fell short of expectations and that the legacy system continues to hinder value creation due to an incomplete migration. Participant 8 discussed strategic technology investment and emphasised the importance of understanding the environment and carefully selecting technology innovations that add value and transform the business. Participant 12 focused on operational efficiency, highlighting how advances in reporting have dramatically reduced turnaround times and created opportunities to make money by providing monetisable premium services.

The Technology Enablement group (yellow) emphasised strategic technology investment and operational efficiency. Participant 3 described how the company's recent business initiatives have significantly reduced risk while improving operational efficiency. As technology has matured, downtime has been minimised, and infrastructure maintenance is now scheduled for bi-annual upgrades. Participant 6 emphasised the importance of strategic technology investment and described how an internal review led to the migration of current systems to a more modular platform that facilitates planning for future development and flexibility.

The Professional Services group (pink) focused on revenue generation and operational efficiency. To increase operational efficiency, Participant 1 emphasised the importance of optimising the business from start to finish. Participant 5 pointed out that although the company has tried to monetise its user base through the recently launched platform services, the expected revenue increases have not yet materialised. This shows how difficult it is to fully capitalise on current revenue generation opportunities and that asset and system utilisation needs to be improved.

**Cross-case:** Across all groups, the issues of operational efficiency, strategic technology investment and financial mismanagement highlight the ongoing challenges of balancing cost management and revenue generation in digital servitisation. The Financial Services group pointed to the sunk cost fallacy, i.e. continuing to invest in failed projects, indicating

poor financial decision-making while trying to maintain efficiency without stifling innovation. The Telecommunications group faces similar problems, spending too much on legacy systems. However, it focuses on strategic technology investments to add value and improve reporting efficiency, creating new, monetisable opportunities. The Technology Enablement group has achieved operational gains by reducing risk, minimising downtime through strategic investment and making systems more adaptable to future requirements. In the Professional Services group, efforts to improve revenue generation through platform services have yet to meet expectations, demonstrating how difficult it is to fully capitalise on existing opportunities while striving for greater operational efficiency.

**5.3.7.3 Conclusion of Digital Servitisation Performance.** There are similarities between the groups in balancing strategic technology investment and operational efficiency. The Financial Services, Telecommunications and Technology Enablement groups emphasised the importance of allocating resources to appropriate technologies to optimise workflows, minimise unavailability and increase operational adaptability. Another issue the groups shared is the need to realise full revenue potential. The Financial Services and Professional Services groups stated that fully utilising digital initiatives can be challenging. Another issue was financial mismanagement. Some groups highlighted the risk of over-investing in initiatives that do not deliver the expected returns. In particular, Financial Services and Telecommunications companies pointed to sunk costs and ineffective financial decisions.

The differences highlighted by the Telecommunications group are characterised by its focus on generating revenue from innovative technological developments by offering premium services. In comparison, the Professional Services group pointed out the challenges in realising the expected revenue growth from its digital services. In contrast to the other groups, the Technology Enablement group has demonstrated a more proactive approach to strategic technology investment by successfully reducing risk and increasing operational efficiency through system modularity and strategic internal reviews. The Telecommunications group, which is struggling with legacy systems management and cost overruns, is taking a different approach to efficiency and resource management. At the same time, the Professional Services group has a strong focus on optimising end-to-end operations. Although each group faces difficulties in digital servitisation, there are differences in the scope and success of their approaches to investment, efficiency, and revenue generation.

### *5.3.8 Research Question 2: Conclusion*

Table 5.19 below concludes the theme description as per the Conceptual Framework and provides a description of the related themes and the similarities and differences from the respective theme analyses.

**Table 5.19: Research Questions 2 Theme Analyses**

| Theme | Theme Description | Similarities Description | Differences Description |
|---|---|---|---|
| Microfoundations | The structures and processes that enable transitioning in organisations | Strategic alignment and execution is a key focuses for ensuring transformation | Leadership and decision-making vary, with some groups placing more emphasis on strategic alignment than leadership |
| Dynamic Capabilities | Innovation is driven by strategic product ownership and technological expertise | The importance of a balance between technology expertise and product ownership | Different aspects of ownership and technology that prioritise operational control, modularity or experience |
| Microfoundations for Transformation | The balance between digital transformation and internal alignment | People, processes and technologies need to be aligned for a successful transformation | Broader transformation beyond technology, while others focus more on the internal alignment of processes |
| Servitisation | Shift towards consumer-orientated product development in a competitive market | The development of products that are orientated towards consumer needs | Innovating to remain competitive while others focus on refining consumer-orientated offerings |
| Microfoundations Interdependencies | Stakeholder misalignment and change management in organisational change | Awareness of the crucial role that dealing with misalignment plays in successful transformation | Focus on stakeholder issues, while others emphasise the challenges of change management |
| Microfoundations Performance Combinations | Evaluating performance metrics for the success of services and technology implementations | The importance of tracking the success of services and technology initiatives | Broader measurement challenges, while others rely on specific success metrics |
| Digital Servitisation Performance | Balancing strategic technology investments and operational efficiency to drive performance | Recognise the importance of operational efficiency in improving performance | Prioritise strategic technology investments, while others focus on operational gains |

Note: Author's own.

### *5.3.9 Chapter Conclusion*

Table 5.20 summarises the research chapters consolidating research question 1 and research question 2, highlighting the similarities and differences.

**Table 5.20: Research Questions 1 and 2 Theme Consolidation**

| Theme | Similarities Description | Differences Description |
|---|---|---|
| **Contextual Factors** *Impact of external and internal factors on digital transformation* | All groups recognise the critical role of external factors influencing digital transformation | Each group prioritises different external challenges, from societal impacts to compliance and technology availability |
| **Key Challenges** *Obstacles that every sector faces in the transition to digital servitisation* | Digital transformation depends on improving cross-functional collaboration, modernising legacy systems and overcoming technology integration challenges | The differences are some groups focus more on modernising legacy systems, while others emphasise cross-functional alignment or specific technology integration challenges |
| **Key Enablers** *The factors driving the transition of digital servitisation efforts* | All topics highlight the need to improve the customer experience and leadership in using technology as key factors | The focus on financial drivers varies, with some groups emphasizing leadership while others highlighting customer engagement and technology |
| **Digital Servitisation** The process of using digital technology to enhance service offerings | All topics focus on the strategic use of technology and the importance of developing internal processes for better impact | Differing approaches to prioritising technological development, while others highlight cybersecurity as a key concern |
| **Microfoundations for Digital Servitisation** *The essential elements that support digital servitisation* | Leadership and innovation, as well as modularity, are emphasised in all subject areas as crucial in driving the implementation of the transformation | Some groups focus more on control of technology, while others emphasise leadership and modularity in innovation for effective digital adoption |
| **Microfoundations** *The structures and processes that enable transitioning in organisations* | Strategic alignment and execution is a key focuses for ensuring transformation | Leadership and decision-making vary, with some groups placing more emphasis on strategic alignment than leadership |
| **Dynamic Capabilities** *Innovation is driven by strategic product ownership and technological expertise* | The importance of a balance between technology expertise and product ownership | Different aspects of ownership and technology that prioritise operational control, modularity or experience |
| **Microfoundations for Transformation** *The balance between* | People, processes and technologies need to be aligned for a successful transformation | Broader transformation beyond technology, while others focus more on the |

| Theme | Similarities Description | Differences Description |
|---|---|---|
| *digital transformation and internal alignment* | | internal alignment of processes |
| **Servitisation** *Shift towards consumer-orientated product development in a competitive market* | The development of products that are orientated towards consumer needs | Innovating to remain competitive while others focus on refining consumer-orientated offerings |
| **Microfoundations Interdependencies** *Stakeholder misalignment and change management in organisational change* | Awareness of the crucial role that dealing with misalignment plays in successful transformation | Focus on stakeholder issues, while others emphasise the challenges of change management |
| **Microfoundations Performance Combinations** *Evaluating performance metrics for the success of services and technology implementations* | The importance of tracking the success of services and technology initiatives | Broader measurement challenges, while others rely on specific success metrics |
| **Digital Servitisation Performance** *Balancing strategic technology investments and operational efficiency to drive performance* | Recognise the importance of operational efficiency in improving performance | Prioritise strategic technology investments, while others focus on operational gains |

Note: Author's own.

This chapter summarises the thematic findings and their implications for digital servitisation and reflects on shared experiences and sector-specific nuances in the transition to digital business models. In all thematic areas, aligning technology with strategic goals is a cornerstone of successful digital transformation. Collaboration, leadership, and operational efficiency are significant themes and fundamental elements that enable organisations to evolve into a digital services business model. A balanced approach that combines internal process improvements with customer-centric service delivery is critical to improving operational metrics and customer experience. Strategic alignment and effective execution remain crucial elements of organisational change.

Dynamic capabilities and servitisation reveal the significance of refining product development and service offerings to meet changing customer needs. These findings echo a commitment to adaptable, customer-centric innovation that spans across sectors and provides an advantage.

The chapter also highlights key differences that influence how organisations manage digital transformation. The chapter also highlights significant differences that affect how organisations manage digital transformation. Several contextual factors, including technological accessibility, societal expectations and regulatory requirements, determine the focus of transformation efforts. The key challenges vary; while some sectors prioritise technological integration or cross-functional collaboration, others focus on modernising legacy systems. Critical factors such as leadership, customer engagement, and financial factors are of different importance and reflect the unique operational context of each sector.

The findings also expand the study's conceptual framework by introducing five sub-themes: Technology and Social Impact, Digitalisation and Workplace Safety, Strategic Alignment, Digital Technology and Beyond, and Technology and Cybersecurity. These sub-themes, highlighted in green in Figure 5.1, revised conceptual framework, draw attention to subtle aspects of digital servitisation that emerged during the analysis. The updated framework provides a more thorough understanding of the relationships accelerating digital transformation by graphically summarising these sub-themes under the corresponding theoretical themes.

Finally, the performance of digital servitisation highlights the common need to align strategic technology investment and operational efficiency. While all sectors strive to optimise workflows and increase revenue potential, challenges such as financial mismanagement, sunk costs and delayed ROI emerge as common barriers. However, the findings also show differences in how sectors prioritise efficiency, innovation and customer experience to achieve digital outcomes.

This chapter summarises the interdependencies, capabilities, and performance characteristics that guide digital servitisation. The revised conceptual framework (Figure 5.1) summarises the factors influencing change. These findings form the basis for Chapter 6, which compares the findings from Chapter 5 with the existing literature from Chapter 2 and analyses the theoretical and practical aspects of digital transformation.

# CHAPTER 6: DISCUSSION

## 6.1 Introduction

Chapter 6 builds on the findings presented in Chapter 5 by systematically comparing them with the literature in Chapter 2. This Chapter 6 discussion is structured according to the research questions and themes.

A structured approach was followed to ensure a systematic process for analysis was conducted for the five sub-themes of Chapter 5 and the twelve themes from Chapter 2. Each theme was analysed by first recapping the findings from Chapter 5 and comparing them with the literature from Chapter 2. Areas of similarity were identified where the findings confirmed the existing literature and concluded.

For themes where differences emerged, further literature searches and analyses were conducted to analyse if these findings represented potential new insights, extended the existing literature or were nuanced perspectives.
The steps of the described process were designed to provide a systematic and consistent approach, though not exhaustive. A three-stage process was utilised.

**Step 1:** For each theme from the literature, a targeted keyword search of three relevant articles was conducted. This first step focused on identifying similarities with the findings in the literature. The theme was confirmed and concluded if the keywords in these sources matched.

**Step 2:** If Step 1 did not provide sufficient findings, an advanced search was conducted via Google Scholar using keywords related to each relevant scholar. Articles published in reputable (3 or 4-star) journals in the last five years were examined. If the articles matched the findings, the theme was confirmed and concluded. If differences were identified, they were analysed in the context of the literature, discussed, and concluded as differences.

**Step 3:** For themes without supporting literature, a Boolean keyword search was conducted in the three journals relevant to the research area. If supporting literature was found, the theme was confirmed and concluded. If no relevant studies were found, the findings were retained and presented as potential new themes or sub-themes.
The reference list includes any new literature introduced and discussed in this chapter. This is additional reading that goes beyond the literature covered in Chapter 2.

The chapter concludes with a summary table summarising the themes, subthemes, and their implications. Chapter 7 presents the revised conceptual framework, where the findings are integrated into a broader theoretical perspective. This systematic analysis enhances the understanding of digital servitisation.

## 6.2 Research Question 1

"What is the relationship between firm characteristics, contextual factors for digital servitisation, and key challenges and enablers of digital servitisation transition?" (Chirumalla et al., 2023, p. 12).

### *6.2.1 RQ 1: Theme 1 – Contextual Factors of Digital Servitisation Transition*

**6.2.1.1 Recap of Findings on the Contextual Factors for Digital Servitisation Transition**. Although the groups looked at external factors from different perspectives, they shared similar concerns about how they influence digital transformation. One similarity between the groups is the realisation that *societal impacts*, technological advancements and economic conditions play an important role in shaping business processes and service delivery. The Financial Services and Telecommunications groups highlighted the need to adapt to consumer technology trends and societal changes, suggesting a broader understanding of how external pressures influence business strategies. The Professional Services and Technology Enablement groups also acknowledged the external influence of AI and digitalisation and how these technologies impact business practices, employment and regulatory requirements.

Although the groups recognised the importance of external factors, their responses and priorities differed. The Financial Services group emphasised the risk of obsolescence for businesses that fail to adapt to changing consumer behaviour. In contrast, the Telecommunications group focused more on regulatory compliance and operational challenges arising from the impact of AI on employees. The Technology Enablement group expressed concern about the need for regulatory oversight of AI and highlighted the impact of new technologies. In contrast, the Professional Services group emphasised the human aspect and expressed concern about the depersonalisation of customers in an increasingly digital environment. The Manufacturing group took a more operational approach, emphasising the cost and availability of technology systems as key concerns.

The findings reflect that *technology impacts societal* changes through digital transformation. The Financial Services and Telecommunications groups highlighted a new insight regarding adapting to technological progress and societal change. In

contrast, the Professional Services and Technology Enablement groups expressed concerns about the impact of AI and digitalisation on business operations, employment and social structures. This potential new sub-theme reflects the different approaches to tackling the societal impact of new technologies, with each group focusing on different aspects of these challenges.

**6.2.1.2 Recap of the Literature on Contextual Factors for Digital Servitisation Transition.** The literature highlighted the critical role of organisational and ecosystem capabilities in digital transformation and emphasised the importance of fostering relationships within the digital ecosystem. Chirumalla et al. (2023) noted that alignment and a shared understanding of digital centrality among ecosystem players are essential for successful transformation efforts. Frank et al. (2019) also underline the shift from product-based to service-based business models, driven by consumer demand and market-driven innovation, necessitating changes in organisational structures and the development of new capabilities.

As Coreynen et al. (2020) noted, contextual factors, particularly technological readiness and positioning within the value network, play an important role in shaping digital transformation. The challenges companies face in sourcing additional capacity and integrating new technologies are influenced by their internal capabilities and external conditions. Baines et al. (2020) also underscore that these factors influence investment decisions in digital systems and platforms, suggesting that both internal readiness and external technological trends must be aligned for successful transformation.

The literature highlights the importance of technological readiness and alignment with value networks (Coreynen et al., 2020). These expectations add an additional layer of complexity and influence how companies prioritise digital investments (Baines et al. (2020)

**6.2.1.3 Discussion of Findings with Literature.** The findings suggest that external factors such as technological advancements and economic conditions play an important role in shaping digital transformation. The literature, as noted by Chirumalla et al. (2023), similarly emphasises the importance of organisational and ecosystem capabilities, technological readiness, and positioning within value networks (Coreynen et al., 2020).

The findings also reflect that groups such as the Financial Services and Telecommunications sectors focus on adapting to consumer technology trends and societal changes as key drivers for transforming business strategies. Similarly, the literature, particularly Frank et al. (2019), emphasises the shift from product-based to service-based business models driven by market-driven innovation and consumer demand.

The Manufacturing group's findings emphasise the concerns about the cost and availability of technology systems as key challenges in digital transformation. The group focused on the operational impact of investment decisions, with technology constraints and budget limitations influencing their strategic priorities. This confirms the literature, particularly Baines et al. (2020), who highlight that investment decisions in digital systems and platforms are significantly influenced by an organisation's internal capabilities and external conditions.

Having discussed the similarities in literature, it was noted that the findings had areas of difference, particular in the findings presenting a potential difference about the *societal impact* of AI and digitalisation, particularly in the Professional Services and Technology Enablement groups, where issues such as the depersonalisation of customers and changes in the world of work are prominent, placing importance on societal impact. While the literature discusses technological readiness and the alignment of the value network (Coreynen et al., 2020), it does not discuss these societal impacts in detail. Given this potential difference, the 3-step process was applied to identify any additional literature that may be relevant to the social element identified in the findings.

**Step 1:** A targeted search for the keywords “social”, “societal”, and “societal impact” was conducted in the selected articles of Chirumalla et al. (2023), Baines et al. (2020) and Coreynen et al. (2020) in the extant literature.

The word searches yielded no results.

**Step 2:** A search for the keywords “social”, “societal” and “societal impact” was carried out on Google Scholar. When searching for and selecting the scholars Chirumalla, Baines and Coreynen, the relevant articles from the last five years were checked and the researcher ensured that they came from reputable journals (3 or 4 stars).

**Table 6.1: Scholars**

| Scholar | Article |
|---|---|
| Koteshwar Chirumalla | Chirumalla et al. (2023) |
| Tim Baines | Baines et al. (2020) |
| Wim Coreynen | Coreynen et al. (2020) |

Note: Author's own.

A word match was found for Baines regarding the contextual factors shaping the organisational transformations towards servitisation. Although Baines's context indicated similarity regarding introducing the internal and external factors influencing organisations, no significant discussion was noted regarding technology and social impact. Only the words "social aspects" were mentioned as a factor. Since this was only a mention, the researcher concluded that this was insufficient of the findings of this article.

No results were provided on the Chirumalla and Coreynen literature. And therefore step 3 was done.

**Step 3:** A Boolean keyword search of "social", "societal", and "societal impact" was conducted for the relevant academic journals, Journal of Business Research, International Journal of Production Economics and Industrial Marketing Management. The word searches yielded no results.

**6.2.1.4 Conclusion.** The findings are similar to the literature. Based on the systematic process followed, no literature was identified on this topic of technology and societal impact. And in addition, based on the work done, the conclusion is that the findings differ from the extant literature. This difference of nuance suggests that digital transformation should not only focus on technological readiness and economic factors, but also consider how technology has a societal impact. This is presented as a potential new sub-theme to the contextual factors theme in the updated conceptual framework at the end of this chapter.

### *6.2.2 RQ 1: Theme 2 – Key Challenges of Digital Servitisation Transition*

**6.2.2.1 Recap of Findings on the Key Challenges.** The Financial Services and Telecommunications groups shared similarities in identifying cross-functional alignment and legacy systems as key obstacles to the digitalisation of services. The Financial

Services group highlighted problems with organisational flexibility and technical coordination, particularly in adapting legacy systems and aligning strategies and technologies. Similarly, the Telecommunications group pointed to silo thinking and lack of collaboration as significant barriers. Both groups discussed the importance of organisational adaptability and the need to modernise infrastructure. However, while the Financial Services group focused more on internal decision-making and over-investment in outdated projects, the Telecommunications group highlighted the difficulties that legacy companies face in adopting new technologies.

The Technology Enablement and Professional Services groups emphasised the need for organisational adaptability, albeit with different emphases. The Technology Enablement group discussed existential threats to companies that need to realign or face closure and emphasised the need to re-evaluate business models and integrate flexible systems. In contrast, the Professional Services group emphasised organisational inertia and the challenge of moving from traditional linear models to platform-based strategies. Both groups recognised the resistance to change, with the Technology Enablement group focusing on the technical complexity of implementation, while the Professional Services group emphasised the need to seize new opportunities and introduce scalable models.

**6.2.2.2 Recap of Literature on Key Challenges from Literature.** Organisations pursuing a digital servitisation strategy must find a balance between the dual demands of exploitation and exploration – a complex challenge that requires specialised skills to manage the transformation (Coreynen et al., 2020). This complexity is compounded by the need to engage willing participants in long-term partnerships and share organisational knowledge and experience to drive change (Chirumalla et al., 2023). A major barrier is the improvement of organisational practices and skills to fully exploit these digital systems (Kohtamäki et al., 2020). Acquiring expertise and digital literacy is critical to managing this change and requires a cultural shift within the organisation (Chirumalla et al., 2023). Different environments influence the dynamic relationship between an organisation's capabilities and its strategy, highlighting the complexity of aligning digital, strategic and business model innovation (Coreynen et al., 2020).

Digital servitisation is a multi-layered process that involves the intersection of strategy, technology and business model innovation, all of which are interdependent (Paiola & Gebauer, 2020). In the face of constant advances in technology and changing market demands, organisations must cultivate a culture of continuous innovation to remain

competitive (Haaker et al., 2021). Implementing these changes, especially when adopting sophisticated digital technologies, requires specialised knowledge and skills (Frank et al., 2019). In addition, digital servitisation strategies require companies to balance their market positioning by offering quality solutions that may not directly lead to higher revenues, as highlighted by Favoretto et al. (2022). This emphasises the challenge of balancing technological innovation with business outcomes.

**6.2.2.3 Discussion of the Findings with Literature.** The findings indicated that cross-functional alignment is a critical challenge. The Financial Services group pointed to difficulties in coordinating legacy systems with strategic objectives, while the Telecommunications group cited silo thinking and resistance to collaboration as key barriers to innovation. In the literature, Coreynen et al. (2020) similarly highlight that balanced cross-functional integration is essential for successful digital servitisation. Furthermore, Chirumalla et al. (2023) emphasise that cross-functional collaboration needs to be complemented by external partnerships, broadening the perspective beyond internal collaboration.

The findings suggest legacy systems are a significant obstacle. The Financial Services group noted that too much investment has been made in outdated technology, making it difficult to move to modern solutions, while the Telecommunications group emphasised the operational challenge of updating legacy infrastructure to support digital transformation. Similarly, Haaker et al. (2021) emphasise in the literature the need to modernise existing infrastructures to keep pace with rapid technological change. Likewise, Baines et al. (2020) discuss the strategic difficulty of aligning legacy systems with future business strategies, highlighting the need for companies to invest in technological upgrades.

Resistance to change emerged as a challenge in the findings. The Technology Enablement group pointed to the technical complexity of implementing new systems, while the Professional Services group identified resistance to moving away from outdated business models. This confirms the literature – Frank et al. (2019) argued that overcoming resistance requires a cultural shift within organisations that embraces digital technologies and develops digital expertise. Chirumalla et al. (2023) also note that resistance often results from a lack of digital literacy and an entrenched focus on maintaining traditional processes.

The Financial Services and Telecommunications groups emphasised the urgent need to address internal pressures such as legacy systems and organisational adaptability. However, while the findings focus on these immediate operational challenges, the literature, as noted by Paiola and Gebauer (2020), broadens this view by emphasising the need for long-term strategic change through partnerships and ecosystem collaboration to drive innovation. This nuanced difference suggests that while the findings and literature agree on the importance of overcoming key challenges, the findings focus on short-term operational solutions, whereas the literature argues for a longer-term, strategic approach.

**Step 1:** A targeted search for the keywords “immediate”, “short-term”, and “shift” was conducted in the selected articles of Chirumalla et al. (2023), Baines et al. (2020) and Coreynen et al. (2020) in the extant literature.

**Table 6.2: Scholars**

| Scholar | Article |
|---|---|
| Koteshwar Chirumalla | Chirumalla et al. (2023) |
| Tim Baines | Baines et al. (2020) |
| Wim Coreynen | Coreynen et al. (2020) |

Note. Author’s own.

A word match was found in the extant literature when searching for 'short-term'. The literature discussed the role of best practices in organisational change. Baines discusses the adoption of Kotter's change management model, particularly through the design of short-term wins to support immediate organisational needs (Baines et al., 2020).

No results were provided from the Chirumalla and Coreynen literature.

**6.2.2.4 Conclusion.** The research findings are similar to the extant literature and confirm the key challenges that short-term wins are essential in managing significant change and ensuring quick wins during transformation efforts.

### *6.2.3 RQ 1: Theme 3 – Key Enablers of Digital Servitisation Transition*

**6.2.3.1 Recap of Findings on the Key Enablers.** The similarities between the groups were that customer experience and financial factors were highlighted as enablers to optimising digital services. Improving customer interaction and providing seamless digital experiences are important for competitiveness. Financial stability was also cited

as essential to enable continued investment in digital transformation initiatives. Leadership skills and technological understanding were mentioned, particularly for managing partnerships, technology adoption and strategic decision making.

There are differences in how the groups prioritise and approach these topics. The Financial Services group prioritises partnerships and ecosystem providers to drive innovation. In contrast, the Telecommunication group faces the challenge of balancing operating costs and infrastructure investments. The Technology Enablement group focuses on building trust and ensuring that digital solutions effectively fulfil customer needs. In contrast, the Professional Services group focuses on the financial returns of digital transformation, particularly innovation and integrated solutions. The Manufacturing group approaches digital services through flexible service models that are tailored to evolving customer needs and reflect a customer-centric perspective.

**6.2.3.2 Recap of Literature on the Key Enablers.** Effective management practices and organisational structures play a pivotal role in fostering an innovative and agile mindset, essential for digital transformation (Chirumalla et al., 2023). Digital expertise enables organisations to adapt quickly to both market demands and technological shifts, driving broader value chain transformation through well-aligned business models and solid governance frameworks (Favoretto et al., 2022). These elements collectively act as key enablers in transitioning from traditional to digital servitisation (Chirumalla et al., 2023). Organisational readiness remains integral to this process, with agility reflected in swift responses to customer needs and value chain pivots (Wilden et al., 2019). This readiness is further evident in how technological advancements are effectively integrated into operational practices (Baines et al., 2020).

**6.2.3.3 Discussion of the Findings with Literature.** The findings of the groups point out that customer experience and financial stability are consistently seen as essential prerequisites for optimising digital services. Improving customer interaction and providing seamless digital experiences are critical to maintaining competitiveness across all sectors. This is similar with the literature that highlights organisational readiness as an integral part of digital transformation. Wilden et al (2019), for example, discuss how prompt responses to customer enquiries demonstrate agility and the ability to pivot within the value chain.

The findings suggest that leadership skills and technological understanding are also critical, particularly in managing partnerships, technology adoption and strategic decision

making. Similarly, Chirumalla et al. (2023) emphasise in the literature that mastery of digital technologies enables organisations to respond quickly to evolving market demands and technological advances. Challenges include balancing operating costs with infrastructure investments and building trust to ensure that digital solutions fulfil customer needs. The literature similarly also notes that the seamless integration of technological advancement into business operations reflects an organisation's commitment to digital transformation (Baines et al. (2020).

The findings had differences in the prioritisation of these factors. The Financial Services group placed a strong emphasis on partnerships and ecosystem providers as drivers of innovation, while the Manufacturing group favours flexible service models that adapt to changing customer needs and take a distinctly customer-centric approach. Similarly in literature, Favoretto et al. (2022) discuss how digital mastery promotes broader transformation within the value chain and enables well-aligned business models and robust governance structures. Illustrating the different strategic approaches to digital servitisation in the various sectors.

**6.2.3.4 Conclusion.** The findings are similar to those in the literature, which highlights customer experience, financial stability, agility, and technological expertise as key enablers for digital service orientation. Both emphasise improving customer interaction, fostering innovation, and integrating advances to remain competitive.

### *6.2.4 RQ 1: Theme 4 – Digital Servitisation*

**6.2.4.1 Recap of Findings on Digital Servitisation.** The findings suggest that all groups see digital servitisation as critical for the integration of digital tools into their services. Technology is critical to increasing internal productivity, improving customer interaction and maintaining security across all sectors. Prioritising automation, customer interaction and personalisation are highlighted as fundamental elements of digital approaches, while acknowledging the internal challenges of legacy systems and inefficiencies. The strategic role of technology in operational performance also centres on the use of advanced systems to improve internal processes. A key insight was the need for robust cyber security protocols to protect customer interactions in a digital environment.

There are differences in the specific priorities of each group. The Telecommunications and Financial Services groups focus on customer experience and personalisation, while the Professional Services and Technology Enablement groups focus on cyber security.

The Professional Services group aims to prevent cyber threats by focusing on data security and scalable infrastructures. Similarly, the Technology Enablement group emphasises scalability and operational efficiency as key to successful digital transformation. While all groups emphasise cybersecurity, the Professional Services and Technology Enablement groups see it as essential to maintaining digital services. In contrast, the Financial Services and Telecommunications groups view cybersecurity as part of a broader strategy that includes customer experience and operational efficiency.

**6.2.4.2 Recap of the Literature on Digital Servitisation.** Digital servitisation broadly combines digitalisation with servitisation by incorporating or extending the use of technology (Gebauer et al., 2021). This process requires both service and digital technology competences (Chirumalla et al., 2023), strategically integrating technology, services and processes through digital transformation (Gebauer et al., 2021). This evolution in business processes and customer engagement represents a shift towards providing integrated services that go beyond a pure product focus and enable organisations to create value for their customers to improve their long-term profitability (Frank et al., 2019; Bocken & Geradts, 2020).

Kohtamäki et al. (2020) highlight the strategic role of digital servitisation in merging technology and servitisation and fostering the development of new business models (Frank et al., 2019). Industry 4.0 has expanded opportunities for organisations, offering new service capabilities such as remote monitoring and fully autonomous systems (Coreynen et al., 2020). Recent studies reaffirm the connection of digital servitisation with Industry 4.0 and highlight its role in transformation by combining digital service technologies with responsive systems that adapt to rapid technological change (Sousa-Zomer et al., 2020; Kohtamäki et al., 2020).

**6.2.4.3 Discussion of the Findings with Literature.** The findings on digital servitisation indicate that it plays a critical role in integrating digital tools to improve internal productivity, customer loyalty, and security, which is consistent with the literature. Digital servitisation, as described by Gebauer et al. (2021) and Chirumalla et al. (2023), involves a strategic blend of digitalisation and servitisation through the integration of technology and services, which is a key driver of transformation efforts.

Customer interaction, automation and personalisation have emerged from the findings as essential elements of the digital strategy, which Frank et al. (2019) and Bocken and Geradts (2020) support by emphasising a shift from product-centric models to service-

oriented approaches that increase customer value and contribute to sustainable profitability.

The research findings emphasise scalability and operational efficiency as the foundation of digital transformation, which also confirms the literature's focus on adaptability and rapid response to technological change (Sousa-Zomer et al., 2020; Kohtamäki et al., 2020).

In addition, the findings raise the critical importance of *cybersecurity* for Digital Servitisation. In particular, the Professional Services and Technology Enablement groups see *cybersecurity* as essential to maintaining digital services. In contrast, Financial Services and Telecoms see it as a strategic element with a broader focus on customer experience and operational stability. This suggests that the findings extend beyond the literature by examining digital servitisation broader *cybersecurity*, thus suggesting a potential new sub-theme. Given this potential difference, the 3-step process was applied to identify any additional literature that may be relevant to the social element identified in the findings.

**Step 1:** A targeted search for the keywords "cyber" and "security" was conducted in the selected articles of Chirumalla et al. (2023), Sousa-Zomer et al. (2020) and Coreynen et al. (2020) in the extant literature.

No keyword match was found from Chirumalla, Sousa-Zomer or Coreynen literature.

**Step 2:** A search for the keywords "cyber", "security" and "cyber security" was carried out on Google Scholar. When searching for and selecting the scholars Chirumalla, Souza-Zomer and Coreynen, the relevant articles from the last five years were checked and it was ensured that they came from reputable journals (3 or 4 stars).

A word match was found in Chirumalla regarding the security need when planning for technology implementation. There is no similarity to the context of the word security regarding cyber security. Chirumalla suggests that security be considered as a dimension for technology implementation and financial reasons.

**Table 6.3: Scholars**

| Scholar | Article |
|---|---|
| Koteshwar Chirumalla | Chirumalla et al. (2023) |
| Thayla Tavares Sousa-Zomer | Sousa-Zomer et al. (2020) |
| Wim Coreynen | Coreynen et al. (2020) |

Note: Author's own.

**Step 3:** A Boolean keyword search of "digital servitisation" and "cyber security" was conducted for the relevant academic journals, Journal of Business Research, International Journal of Production Economics and International Journal of Operations and Production Management.

The word searches yielded no results.

**6.2.4.4 Conclusion.** The findings are similar to literature that digital servitisation is essential for improving operational reliability, internal productivity and customer experience. Both the findings and the literature show that it is crucial to integrate digitalisation and servitisation to remain competitive in the long term. The emphasis on key components such as automation, personalisation and adaptability represent a common understanding of digital servitisation as a fundamental tactic for transforming service models and adapting to rapid technological change.

*Cybersecurity* was seen as an area of difference in the literature. This insight is therefore included as a potential new theme in the revised conceptual framework.

### *6.2.5 RQ 1: Theme 5 – Mircrofoundations for Digital Servitisation*

**6.2.5.1 Recap of Findings on Mircrofoundations for Digital Servitisation.** The findings point to leadership as a recurring theme and a fundamental element in all groups that drive digital servitisation efforts. The Financial Services group calls for greater leadership involvement in technology decisions, with a clear focus on a strategic roadmap, while the Professional Services group emphasises proactive leadership in driving technology change. Both groups take a top-down approach, aiming to build trust through defined vision and planning. Similarly, the Telecommunications and Technology Enablement groups highlight the importance of aligning digital transformation with business needs and focusing on strategic thinking that drives innovation and partnerships.

Differences can be seen through the approach to operational control and innovation. The Professional Services group focuses on overcoming internal cultural and technological challenges, while the Technology Enablement group emphasises flexibility, mainly through external partnerships. The Telecommunications group focuses on optimising tasks with the help of automation tools such as CoPilot, while the Financial Services group prioritises continuous skills development and strategic alignment. The Manufacturing group takes a more hands-on, data-driven approach, improving operational efficiency, while the other groups focus more on innovation.

**6.2.5.2 Recap of Literature on the Mircrofoundations for Digital Servitisation.** The literature emphasises that the use of digital technologies by an organisation to improve internal and external processes and the type of servitisation applied are decisive indicators of the maturity level of digital servitisation (Frank et al., 2019). Understanding the three levels of servitisation—replacing, adapting, and smoothing — serves as a framework to assess an organisation's progress towards digital maturity (Frank et al., 2019). Baines et al. (2020) outline four conceptual stages — Exploration, Engagement, Expansion and Exploitation — which represent stages of organisational change and different levels of servitisation maturity and are shaped by numerous internal and external factors.

The maturity phases of digital servitisation can be assessed by an organisation's ability to integrate and adopt digital technologies, enable scalability, manage system integration and implement digital workflows that improve data capture and accessibility across the supply chain. This journey from 'servitisation to digital servitisation' signals a fundamental transformation rather than a mere transition, as Chirumalla et al. (2023) point out, and illustrates a holistic change in operational processes and strategic direction.

**6.2.5.3 Discussion of the Findings with Literature.** The findings highlight that leadership is a fundamental driver for digital servitisation, creating trust and setting the strategic direction across all sectors. Both the Financial Services and Professional Services groups emphasise the need for proactive leadership in adopting digital technologies, confirming the literature of Baines et al. (2020), who highlight the critical role of leadership at different stages of servitisation maturity. The focus on aligning digital transformation with the core needs of the business in the Telecommunications and Technology Enablement groups also aligns with the literature that emphasises leadership in fostering innovation and strategic partnerships.

The findings also reflect different approaches to operational management and innovation across groups, confirming the literature of Frank et al. (2019), who describe the maturity of servitisation through phases like replacing, adapting, and smoothing. The Professional Services group focuses on overcoming cultural and technological challenges, while the Technology Enablement group emphasises flexibility through external partnerships. Finally, the Manufacturing group's data-driven approach to improving operational efficiency confirms the literature's view of digital workflows and data accessibility as markers of digital maturity, as described by Chirumalla et al. (2023).

**6.2.5.4 Conclusion.** The research findings are consistent with the extant literature and confirm the microfoundations for digital servitisation, which contributes to the body of knowledge about the microfoundations for digital servitisation.

## 6.3 Research Question 2

“What are the interdependencies among different microfoundations? How do they affect the performance of digital servitisation? How does the combination of certain microfoundations affect the performance of digital servitisation?” (Chirumalla et al., 2023, p. 11).

### *6.3.1 RQ 2: Theme 6 – Mircrofoundations*

**6.3.1.1 Recap of Findings on the Mircrofoundations.** The findings highlight the common themes of strategic decision-making, leadership and alignment of technology initiatives with broader business objectives across all groups. The Professional Services group emphasised business model transformation and executive buy-in to digital services, while the Financial Services group highlighted strategic partnerships and risk management. Both groups emphasised the importance of strong leadership to enable effective transformation. Similarly, the Telecommunications group focused on collaboration between business and IT teams to align technology efforts with business objectives, and the Technology Enablement group emphasised long-term architecture decisions and driving innovation. Leadership and strategic direction were consistently cited across all groups as critical enablers for digital servitisation.

The groups faced different challenges and operational priorities. The Professional Services group focused on internal customer satisfaction and the shift from linear to platform-based models, while the Financial Services group emphasised risk management and customer-centric market positioning. The Technology Enablement

group struggled with balancing innovation and long-term planning, while the Telecommunications group struggled with project execution difficulties and executive resistance to IT initiatives. In contrast, the Manufacturing group's concerns centred on recruitment challenges, particularly in attracting talent due to outdated technology. These differing priorities reflect the varying operational pressures in different sectors, from customer focus and project delivery to maintaining technological relevance.

**6.3.1.2 Recap of Literature on the Mircrofoundations.** Microfoundations represent the foundational elements that support the development and execution of dynamic capabilities in organisations. These elements include expertise, decision-making frameworks, and managerial cognitive capabilities that together enable organisations to sense opportunities, seize them, and reconfigure resources to sustain a competitive advantage (Teece, 2007; Pitelis et al., 2023). Understanding the microfoundations is critical as they provide the detailed mechanisms that explain how dynamic capabilities are built and maintained.

Microfoundations combine specialised knowledge, organisational frameworks, decision-making policies, and managerial abilities (Pitelis et al., 2023). Managers' cognitive skills, such as problem-solving and conceptual thinking, support dynamic capabilities (Pitelis et al., 2023). Teece (2007) distinguishes between microfoundations and dynamic capabilities by clarifying that the former are the building blocks while the latter is the broader organisational capabilities. This distinction highlights the interdependencies within organisations. Helfat and Peteraf (2015) illustrate the impact of managers' cognitive capabilities on strategic decision-making and show how microfoundations influence organisational change. Effective leadership is essential to drive change through objective assessment and strategic foresight (Suddaby et al., 2020).

Chirumalla et al. (2023) categorise dynamic capabilities and associated microfoundations as explore, exploit and transform, emphasising that higher-order capabilities enable organisations to adapt to new opportunities. Higher-order capabilities, as defined by Winter (2003), help organisations to overcome path dependency and enable them to break away from routines and embrace innovation. Wilden et al. (2019) further support this by explaining that higher-order capabilities enable organisations to overcome the limitations of past decisions, particularly in the context of business model innovation, which often lags behind technological advancement (Teece, 2018). Seizing dynamic capabilities rather than maintaining routine functions is essential for the transformation and growth of an organisation (Teece, 2007).

**6.3.1.3 Discussion of the Findings with Literature.** The research findings highlight the crucial role of leadership in driving digital servitisation across all groups. Financial service providers emphasise the involvement of managers in technology decisions and the need for a clear strategic roadmap. Similarly, the Professional Services group emphasises the importance of proactive leadership in anticipating technological change, with both groups focusing on building trust through a top-down approach. These findings confirm the literature in which Teece (2007) and Pitelis et al. (2023) discuss leadership and decision-making frameworks as fundamental microfoundations attributes. And that organisational transformation is more successfully driven by managers and leaders with skills such as objective evaluation, conceptual thinking, and foresight than those lacking these competencies (Suddaby et al., 2020).

The research findings similarly highlight the need to align digital transformation with business objectives, focusing on strategic thinking and fostering partnerships. These findings confirm the literature on the importance of strategic decision-making and strategic change as a microfoundational element (Helfat & Peteraf, 2015). Both the findings and the literature highlight the essential role of leadership in guiding strategic decisions that enable successful digital transformation.

The findings suggest differences in the way the groups approach innovation and operational control. The Professional Services group prioritises overcoming internal cultural and technological challenges, while the Technology Enablement group focuses on flexibility, particularly through external partnerships. This is consistent with Chirumalla et al. (2023) who categorise microfoundations into 'explore', 'exploit' and 'transform'. The Manufacturing group's data-driven approach to improving operational efficiency rather than prioritising innovation reflects the different operational priorities as described in the literature on path dependency (Wilden et al., 2019).

**6.3.1.4 Conclusion.** The research findings are consistent with the extant literature and confirm the microfoundations for digital servitisation, thereby contributing to the body of knowledge about microfoundations.

### *6.3.2 RQ 2: Theme 7 – Dynamic Capabilities*

**6.3.2.1 Recap of Findings on the Mircrofoundations for Dynamic Capabilities.** The findings highlight a common challenge of balancing internal technological capabilities with external market pressures and customer expectations.

The Financial Services group pointed to competitive pressures from FinTechs and InsurTechs to innovate customer offerings. Similarly, the Telecommunications group noted that market forces are driving the rapid and affordable adoption of technology and described this as "consumer-driven". The Technology Enablement and Professional Services groups focused on the strategic shift towards customer and product-centric models and emphasised the need for digital-first strategies to meet changing customer demands. A common theme across these groups was adapting technology to external conditions to remain competitive and flexible.

The findings reflected the differences in operational priorities. The Financial Services group focused on strengthening internal infrastructure to maintain its market position, while the Telecommunications group wanted to expand service management to serve a larger customer base. The Technology Enablement group, still in the early stages of its product-led transformation, focused on balancing demographic change and improving the customer experience. In contrast, the Professional Services group focused on digital-first strategies and security challenges, which it saw as an opportunity to improve its market position through service offerings. The Manufacturing group underscored the unpredictability of new technologies and the need for better alignment between operational processes and technological advances.

**6.3.2.2 Recap of Literature on the Mircrofoundations for Dynamic Capabilities**. Dynamic capabilities are a critical source of sustainable competitive advantage and encompass an organisation's resources, skills, practices, and processes (Pitelis et al., 2023). The dynamic capabilities framework explains how organisations can align their models and processes with external conditions and, where possible, shape the environment to their advantage (Pitelis et al., 2023). The seminal work of Teece, Pisano and Shuen in the 1990s established a theoretical understanding of how organisations respond to external shocks, such as market changes and technological disruptions (Teece, 2007). Dynamic capabilities are usually divided into three categories: Sensing, Seizing and Transforming (Pitelis et al., 2023). Strategic management draws on these dynamic capabilities and leaders' personal experiences to demonstrate how an organisation adapts to changing market conditions and competitive pressures, enabling it to effectively identify, deploy and reconfigure resources (Kurtmollaiev, 2020). This framework also assesses the performance of an organisation and its broader ecosystem (Teece, 2018).

In contrast to operational capabilities, which focus on efficiency and routine tasks, dynamic capabilities are about strategic adaptation and innovation (Pitelis & Wang, 2019). Sensing involves continuously scanning the business environment for potential changes that can influence business dynamics (Helfat & Peteraf, 2015). The ability to implement and seize these opportunities is critical to developing disruption strategies that ensure the sustainability of the business, even if this requires specialised skills (Teece, 2007).

Sensing involves practical activities such as data use, processing and interpretation to identify new opportunities while integrating digital skills into the organisation (Chirumalla et al., 2023). Seizing focuses on work processes, decision making and ecosystem integration (Coreynen et al., 2020), and transforming includes capabilities such as new product development, scenario planning and revenue stream adaptation (Chirumalla et al., 2023). However, not all organisations are equally good at building or implementing these dynamic capabilities. Some excel in identifying opportunities, while others are better at seizing or transforming themselves (Teece, 2018).

**6.3.2.3 Discussion of the Findings with Literature.** The research findings suggest that balancing internal technological capabilities and external market pressures is a common challenge. The Financial Services group pointed to pressures from FinTechs and InsurTechs to innovate customer offerings, while the Telecommunications group highlighted consumer-driven technology adoption. Similarly, the Technology Enablement and Professional Services groups emphasised customer-centric models and digital-first strategies to meet changing demands. This confirms the literature that emphasises the importance of dynamic capabilities in adapting internal processes to external conditions in order to maintain competitiveness (Pitelis et al., 2023; Teece, 2007).

The differences in the research findings were found in the operational priorities of each group. The Financial Services group focused on strengthening internal infrastructure, while the Telecommunications group prioritised scaling services to a larger customer base. The Technology Enablement group focused on balancing demographic change with improved customer experiences. In contrast, the Professional Services group looked at digital-first strategies and security challenges as opportunities to improve market positioning. This confirms the distinction made in the literature between operational and dynamic capabilities, with dynamic capabilities being more focused on strategic adaptation and innovation (Pitelis & Wang, 2019; Teece, 2007).

The research findings regarding how organisations respond to external pressures confirm the literature's categorisation of dynamic capabilities into sensing, seizing and transforming (Pitelis et al., 2023). Sensing involves identifying market opportunities through data analysis, while seizing involves making decisions to capitalise on these opportunities. The research finding that organisations are adapting their operations based on market dynamics confirms this, as does the emphasis on transforming capabilities to adapt to new products and processes noted by groups such as Technology Enablement and Manufacturing. This confirms the literature that transformation is necessary to maintain competitive advantage (Teece, 2018; Chirumalla et al., 2023).

**6.3.2.4 Conclusion.** The research findings are consistent with the extant literature and confirm the microfoundations for digital servitisation, thereby contributing to the body of knowledge about dynamic capabilities.

### *6.3.3 RQ 2: Theme 8 – Microfoundations for Transformation*

**6.3.3.1 Recap of Findings on the Microfoundations for Transformation.** The similarity among all groups is that digital transformation is significantly changing business models, customer interactions and operational processes and goes beyond the implementation of new technologies. The key drivers that unite the groups are the realisation of improved services and customer-centric strategies. In the Financial Services and Telecommunications sectors, the focus is on customer enablement, bringing together people, processes and technology to create seamless, end-to-end customer experiences. Similarly, the Technology Enablement and Professional Services groups emphasise the importance of flexibility and creativity, as well as the need for solid internal resources to meet changing market demands and customer expectations. The theme *"Digital transformation beyond technology"* emphasises that transformation is not just about system changes, but about reshaping the entire business environment. Suggesting that developing new capabilities, deploying innovative strategies and driving internal and external value creation are critical to success in this dynamic environment. This adaptability ensures that those involved are prepared for the challenges and opportunities of digital transformation.

The differences can be seen in the Telecommunications group, which focuses more on monetising digital services and reorganising internal roles, and the Financial Services group, which focuses on educating users and optimising the digital experience. The

Professional Services group emphasises being a strategic partner and responding quickly to market changes. In contrast, the Technology Enablement group emphasises internal capabilities and long-term planning for managing digital platforms. In contrast to the other groups, which focus on customer-centric innovation, the Manufacturing group takes a different approach by focusing on the IoT to improve operational intelligence and agility.

**6.3.3.2 Recap of Literature on the Microfoundations for Transformation.** Chirumalla et al. (2023) present an integrative model that identifies the dynamic capabilities and associated microfoundations required for organisational transformation. The four critical microfoundations of digital servitisation include agile cocreation processes, partnership governance, central coordination and digital platforms. These elements simplify the seizing of microfoundations, helping organisations understand how they can implement improved value propositions using new technologies.

*Agile cocreation* is generally an iterative process that enables organisations to respond quickly to external demands (Melián-Alzola et al., 2020). Organisational agility builds on strategy, structure, process and technology and enables companies to respond incrementally to environmental changes (Baines et al., 2020). Agile cocreation fosters innovation by enabling early value creation that leads to long-term organisational success through customer-centric strategies (Chirumalla et al., 2023).

*Partnership governance* is essential for managing external alliances, fostering innovation and mitigating risk (Chirumalla et al., 2023). Governance impacts decision-making and building partnerships enables organisations to access specialised capabilities while mitigating the risks associated with transformation (Teece, 2018). Successful cocreation requires transparent governance that enables organisations to exploit new opportunities through ecosystems while effectively managing risks (Warner & Wäger, 2019).

*Centralised coordination* and integration involve relationship building and decision-making to align the entire value chain. Digital technologies are critical for gathering and integrating information to improve internal and external processes (Favoretto et al., 2022). The effective use of technology supports centralised coordination with external partners and facilitates operational agility and transformation (Warner & Wäger, 2019).

*Digital systems and platforms* are essential to deliver advanced services, support the integration of new technologies and enable external network partners to participate in

the market (Frank et al., 2019). Digital platforms enable organisational agility and streamline information sharing, while "digital- savvy leadership" guides strategic decisions that shape the transformation of the organisation (Sousa-Zomer et al., 2020). These systems help to manage partnerships and mitigate risk and form the basis for long-term success (Favoretto et al., 2022).

**6.3.3.3 Discussion of the Findings with Literature.** The research findings, which highlight that digital transformation is not just about implementing technologies, but about a fundamental transformation of business models, customer interactions and operational processes, confirm the literature as Chirumalla et al. (2023) state that agile cocreation processes are critical to responding to external demands and driving customer-centric strategies.

The research findings, which similarly present that flexibility, creativity and the optimisation of internal resources meet changing market demands and customer expectations, confirm the literature as Favoretto et al. (2022) state that aligning internal resources with external processes through technological integration is critical to improving agility and adaptability.

The research findings highlight the critical role of partnership leadership in driving digital transformation, confirming the literature as Chirumalla et al. (2023) state that governance plays a critical role in decision-making and that partnerships enable organisations to access specialised capabilities.

The research findings present differences between the groups' operational approaches for digital systems and platforms. The Technology Enablement group's focus on internal capabilities and long-term management of digital platforms confirms the literature by Frank et al. (2019), who describe digital platforms as essential to enable external network partners to participate in the market and thus support long-term growth and agility. The Manufacturing group in contrast noted the IoT to improve operational intelligence, which confirms the literature on digital platforms and systems as the technological foundation for integrated, data-driven business models (Sousa-Zomer et al., 2020).

Furthermore, the research findings on the topic of strategic adaptability are considered critical. The Professional Services group highlighted the importance of becoming a strategic partner and responding quickly to market changes, which confirms the literature

on the agile processes described by Melián-Alzola et al. (2020), which emphasise iterative and flexible responses to external pressures.

Furthermore, the findings emphasise that "Digital transformation beyond technology" is not just about upgrading systems but about transforming the entire business environment, suggesting that a holistic view of digital transformation with a strong focus on the broader transformation of business models and customer-centric strategies is critical. In contrast, the literature discusses the structural and process-oriented mechanisms such as agile cocreation, partnership-based governance and platform-based integration (Chirumalla et al., 2023; Frank et al., 2019). This suggests that the research findings extend beyond the extant literature discussing microfoundations for transformation, thus suggesting a potential new sub-theme. Given this potential difference, the 3-step process was followed to identify additional literature relevant to "digital transformation beyond technology" in the findings.

**Step 1:** A targeted search for the keywords “value”, “creation”, and “transformation” was conducted in the selected articles of Chirumalla et al. (2023), Frank et al. (2019) and Sousa-Zomer et al. (2020) in the extant literature.

The keyword search revealed a match in Chirumalla's extant literature, especially on “value” and “creation” concepts. Chirumalla et al. (2023) discussed the importance of microfoundations for transformation in digital servitisation and emphasised that technological change is only one component of broader organisational change. The literature highlights that digital transformation goes beyond the technological value and boundaries of an organisation's internal processes and can be overcome by adopting an entrepreneurial start-up mindset. The extant literature confirms the research findings on digital transformation beyond technology transformation. No further searches were conducted because of the keyword match.

**6.3.3.4 Conclusion.** The potential sub-theme "Digital transformation beyond technology" was initially considered due to its nuanced difference. The keyword search found this concept in the extant literature, particularly that of Chirumalla et al. (2023), which discusses the organisational and ecosystem-wide impact of microfoundations for transition beyond technology. Therefore, the sub-theme was not retained.

### *6.3.4 RQ 2: Theme 9 – Servitisation*

**6.3.4.1 Recap of Findings on the Servitisation.** The similarities across the groups suggest a focus on market competitiveness, customer-centric development and product modernisation. The groups recognise the importance of aligning strategies with customer needs. The Financial Services and Technology Enablement groups focus on product modernisation through software-as-a-service offerings and streamlining customer transactions, which highlight how digitalisation enhances customer loyalty, maximises the product offering and emphasises the customer experience as a critical point of differentiation. The Professional Services group focuses on solving customer problems and improving relationships with suppliers and customers, while the Telecommunications group explores global opportunities.

However, the approaches of the two groups are different. The Telecommunications group focuses on leveraging geographic advantages in the call centre industry and adapting to global market demands. The Financial Services group emphasises execution discipline and considers the role of the informal market in product modernisation. The Technology Enablement group focuses on maintaining market share through seamless user experiences, internal innovation and digital product growth. The Professional Services group, on the other hand, focuses more on providing solutions to customer challenges and overcoming competitive pressures to remain relevant in the market.

**6.3.4.2 Recap of Literature on the Servitisation.** Microfoundations play a crucial role in digital servitisation, enabling organisations to integrate digital technologies with service offerings and transition from traditional product-based models to service-oriented models enhanced by digital capabilities. These microfoundations facilitate the adoption of digital platforms, improve customer interactions, and drive innovation in service delivery processes (Chirumalla et al., 2023). Servitisation is a concept researched for decades, as cited by Coreynen et al. (2020). It is a strategic approach designed to meet the evolving needs of customers (Chirumalla et al., 2023). Servitisation is fundamental for organisations and its practical application as it guides the transformation of businesses from competing purely on products to competing on services and reshapes the business landscape (Baines et al., 2020).

Conceptually, it represents the shift from product-focused to service-orientated business models and changes the perspective from a technology push to a demand-pull focusing on value-added services (Frank et al., 2019). Technology provides product-based organisations the tools and infrastructure to innovate their service offerings and redefine

their business strategies (Frank et al., 2019). Organisations are adopting digital technologies to improve operational efficiency as they begin their digitalisation journey. This marks the first stage of servitisation and lays the foundation for further digitalisation and its benefits (Frank et al., 2019).

**6.3.4.3 Discussion of the Findings with Literature.** The similarities in the research findings underline the importance of competitiveness, customer-centric development and product modernisation. The Financial Services and Technology Enablement groups focus on product modernisation through software-as-a-service offerings and streamlining customer transactions, recognising that digitalisation increases customer loyalty and improves the customer experience. The research findings confirm the literature on servitisation, highlighting the shift from product-centric models to service-centric approaches facilitated by digital technologies (Chirumalla et al., 2023; Frank et al., 2019).

The research findings also emphasise the importance of relationships with key stakeholders. The group emphasised solving customer problems and improving relationships with suppliers and customers, while the Telecommunications group explored global market opportunities. The research findings confirm the literature on transition reshaping the business landscape, with customer-centric development central to maintaining relevance and growth (Baines et al., 2020). The transition from product to service-based models is not just a technological change but a fundamental transformation of business models to create value through services (Frank et al., 2019).

The research findings also point to group-specific differences. The Telecommunications group emphasised using geographical advantages to adapt to global market demands. In contrast, the Financial Services group focused on execution discipline and considered the role of the informal market in modernising products. This confirms the literature on the stages of servitisation (Frank et al., 2019), according to which different industries may prioritise different aspects of the servitisation process depending on their operational needs and market dynamics.

The research findings also emphasise maintaining market share through seamless user experiences, internal innovation and digital product growth, confirming the literature that servitisation offers opportunities to redefine business strategies through digital platforms (Chirumalla et al., 2023). The Professional Services group focused on overcoming customer challenges and competitive pressures, which also confirmed the literature that

servitisation is an ongoing strategic effort to create value through customer-centric services (Frank et al., 2019).

**6.3.4.4 Conclusion.** The research findings are consistent with the extant literature and confirm servitisation, contributing to the body of knowledge about servitisation.

### *6.3.5 RQ 2: Theme 10 – Microfoundations Interdependencies*

**6.3.5.1 Recap of Findings on the Microfoundations Interdependencies.** The findings indicate that efficient change management and stakeholder coordination are crucial elements of digital transformation in all groups. Strategic alignment is critical, whether it is aligning the Telecommunications group's internal operations with shareholder expectations or integrating the Financial Services group's business and technology teams. Both the Technology Enablement and Professional Services groups emphasised the importance of consumer-focused product development and the need for continuous innovation to meet customer needs. In addition, several groups emphasised that the success of technologies such as automation, Artificial Intelligence and modernised digital platforms is highly dependent on end-user adoption, highlighting the critical role of user experience in digital transformation. All groups confirmed that digital transformation requires a holistic approach that includes people, processes and market realities in addition to technology.

The differences between the groups were evident in their operational focus. The Telecommunications group focused on balancing the needs of internal and external stakeholders under market pressure, while the Financial Services group prioritised streamlining communications and meeting long-standing technology commitments. The Professional Services group shifted its focus from reactive to proactive service delivery, while the Technology Enablement group emphasised continuous product development to maintain its competitiveness. A clear difference in the pace of transformation was observed. The Manufacturing group struggled with the balancing act between digital ambition and practical implementation, in contrast to other sectors that are already advanced in their digital strategies.

**6.3.5.2 Recap of Literature on the Microfoundations Interdependencies.** The interdependencies between the different microfoundations are not only theoretical but also practically necessary, especially in the context of the acquisition and management of capabilities related to physical products, service innovations and digital technologies

by organisations that are on the path to digital servitisation (Chirumalla et al., 2023). These interdependencies exist at different levels — smoothing, adaptation and substitution — each corresponding to different levels of digitalisation: low, moderate and high. The stages and connections between technology and servitisation illustrate how different configurations emerge when these levels are aligned and highlight the complex relationships that drive effective transformation (Frank et al., 2019). These relationships emphasise the importance of these two concepts working together to impact financial performance positively. Service offerings, as a tangible expression of servitisation and the organisation's business model, are critical to maximising the benefits of digitalisation and improving business performance (Kohtamäki et al., 2020).

**6.3.5.3 Discussion of the Findings with Literature.** The research findings emphasise effective change management and stakeholder coordination as critical factors for digital transformation and confirm the literature on the interdependencies between microfoundations in the management of physical products, service innovations and digital technologies (Chirumalla et al., 2023). As observed in the Telecommunications and Financial Services groups, the strategic alignment of internal operations with the business and technology teams also confirms the organisational functions highlighted in the literature to drive transformation (Frank et al., 2019).

The research findings show the importance of consumer-centric product development and continuous innovation. The focus on fulfilling customer needs confirms the literature on service offerings as a driver of innovation through digital platforms (Kohtamäki et al., 2020). Furthermore, the literature confirms the crucial role of end-user adoption of technologies such as automation and Artificial Intelligence in achieving a high level of digitalisation (Chirumalla et al., 2023).

The research findings further highlight the differences in operational orientations — such as the Telecommunications group's balancing of stakeholder needs under market pressures and the Financial Services group's prioritisation of communication and technology commitments – which confirms the stages of servitisation described in the literature, where different industries prioritise different aspects of digitalisation (Frank et al., 2019). The challenges faced by manufacturing in balancing digital ambition and practical implementation are consistent with the realisation that there are complicated relationships driving effective transformation.

The research findings emphasise the Technology Enablement group's prioritisation of continuous product development to maintain competitiveness and confirm the literature's view that digital platforms are essential enablers for continuous innovation (Chirumalla et al., 2023). The findings and literature underline the importance of service offerings for improving business performance through digitalisation (Kohtamäki et al., 2020).

**6.3.5.4 Conclusion**. The researcher noted no differences. The research findings confirmed the Microfoundations Interdependencies performance literature, contributing to the body of knowledge.

### *6.3.6 RQ 2: Theme 11 – Microfoundations performance combinations*

**6.3.6.1 Recap of Findings on the Microfoundations Performance Combinations.** The groups focus on linking technology implementation to specific performance metrics and aligning these with cost reduction efforts. The Financial Services and Telecommunications groups recognise that economic factors, human behaviour and the demand for efficiency influence the adoption of technology. In addition, as mentioned above, the two groups point to the role of technology, including automation and customer engagement platforms, in improving operational efficiency, with cost optimisation being critical, particularly in managing technology spend and customer-facing initiatives. Across all groups, the focus is on defining success metrics in a digitally transformed environment.

Whilst all groups see the value of metrics, they differ in how they quantify these metrics and outcomes. The Financial Services and Telecommunications groups emphasise the economy as a driving factor and examine the impact of human behaviour, industry competition and macroeconomic factors on technology adoption and success. In contrast, the Technology Enablement group focuses on the challenge of demonstrating ROI after large-scale technology investments. It emphasises the difficulty of achieving long-term success metrics. The Professional Services group, on the other hand, prioritises value creation over cost optimisation and considers the customer experience as the primary performance measurement. This stands out from the more operational and technology-orientated approaches of the other groups and suggests that Professional Services focus on maintaining high service standards despite external pressures.

**6.3.6.2 Recap of Literature on the Microfoundations Performance Combinations.** The performance of digital servitisation, especially in integrating digital

technologies, is shaped by combinations of microfoundations that balance internal processes with customer value, a dual focus with significant implications for organisational transformation strategies (Frank et al., 2019). Kohtamäki et al. (2020) examine this connection between digitalisation and financial performance, noting improvements such as increased customer satisfaction, enhanced operational efficiency, and better financial outcomes. Chirumalla et al. (2023), though not specifically discussing microfoundations impacting performance, stress the importance of comprehensive understanding of dynamic capabilities and microfoundations for successful servitisation and digital transformation, emphasizing skill acquisition and management.

Wilden et al. (2019) show that integrating first-order dynamic capabilities within microfoundations is essential for improving organisational performance, as it supports the reconfiguration of resources, adoption of a digital mindset, and the development of digital skills that promote strategic partnerships and ecosystem collaboration. In addition, Sousa-Zomer et al. (2020) highlight the need for robust governance structures to support these efforts, reinforcing the role of well-integrated governance in enhancing digital servitisation outcomes.

**6.3.6.3 Discussion of the Findings with Literature.** The research findings reflect that technology implementation is closely linked to specific performance metrics, focusing on cost reduction. The Financial Services and Telecommunications groups highlighted that economic factors, human behaviour, and efficiency drive technology adoption, particularly regarding automation and customer engagement platforms. This confirms the literature by Kohtamäki et al. (2020) that digitalisation positively impacts financial performance, operational efficiency and customer satisfaction. The research findings discussing the definition of success metrics in a digitally transformed landscape confirms the literature with Frank et al. (2019), who emphasise the balance between internal processes and customer value as critical to effective transformation strategies.

The research findings highlight the differences in approaches to quantifying performance metrics and outcomes. The Financial Services and Telecommunications groups link performance metrics to external factors such as macroeconomic conditions and competition, indicating a market-led approach to technology adoption. This approach confirms the literature; Sousa-Zomer et al. (2020) emphasise the balance between internal resources and external market demands to support effective transformation. The Technology Enablement group addresses the challenge of demonstrating ROI after large-scale technology investments, which confirms the literature as Frank et al. (2019)

cite this as an important consideration for aligning internal processes with customer benefits.

In contrast to the operational and cost-oriented perspectives of findings, the Professional Services group focuses on the customer experience as a key performance indicator, emphasising a customer-centric approach. This is in line with Chirumalla et al. (2023) on the importance of microfoundations in managing dynamic capabilities and creating customer value through service-oriented models. Furthermore, the emphasis on value creation within Professional Services confirms the literature by Wilden et al. (2019), who state that integrating first-order dynamic capabilities into microfoundations improves performance by aligning with customer-centric strategies.

Any difference between the findings relates to the challenges of achieving long-term success metrics, particularly ROI, as noted by the Technology Enablement group. While the literature recognises the need to balance internal and external influences in transformation (Frank et al., 2019), the particular challenge of demonstrating sustainable ROI over more extended periods remains unexplored. This nuanced difference in findings emphasises sectors' difficulty in demonstrating long-term ROI, which is only partially addressed in current research.

**6.3.6.4 Conclusion.** The findings confirm the literature that aligning technology implementation with performance metrics and cost reduction is crucial for digital servitisation. Similar to the literature by Frank et al. (2019) and Kohtamäki et al. (2020), the findings emphasise the role of digitalisation performance combinations in improving financial results, operational efficiency and customer satisfaction. The sectoral differences show priorities, from cost optimisation to customer-centric value creation.

### *6.3.7 RQ 2: Theme 12 – Digital Servitisation Performance*

**6.3.7.1 Recap of Findings on the Digital Servitisation Performance.** The groups share similarities to balance strategic technology investments with operational efficiency. The Financial Services, Telecommunications and Technology Enablement groups highlighted that allocating resources to technology can streamline workflows, minimise downtime and increase flexibility within operations. Another similarity is the challenge of fully realising revenue potential, as both the Financial Services and Professional Services groups reflected on how difficult it is to maximise returns from digital initiatives. In addition, some groups warn of the risk of overinvestment and point to potential pitfalls in projects that do not fulfil the expected returns. The Financial

Services and Telecommunications groups underscored issues such as sunk costs and less effective financial decisions as ongoing challenges.

The differences were in the approaches taken in overcoming these challenges. The Telecommunications group focuses on generating revenue through premium services tied to innovative technologies, while the Professional Services group identifies difficulties in achieving the projected revenue growth through digital services. The Technology Enablement group is proactively attempting to mitigate risk and increase efficiency through system modularity and strategic reviews. The Telecommunications group is struggling with legacy systems and cost management issues and driving efficiency and resource utilisation. The Professional Services group is focusing on optimising end-to-end operations. Although each group faces unique challenges in digital servitisation, they have different approaches to investment, efficiency and revenue growth, highlighting the different landscapes of digital transformation in the various sectors.

**6.3.7.2 Recap of Literature on the Digital Servitisation Performance.** Digital servitisation (DS) is widely viewed as improving business processes. Yet, questions remain about its impact on performance and concerns over value realisation (Kohtamäki et al., 2020). While some companies shifting from products to services report gains, such as lower operating costs (Favoretto et al., 2022), how DS affects long-term performance metrics is still unclear.

One of the challenges in determining the value of DS is due to the critical dependencies and the complexity of DS initiatives. DS depends on organisational support systems, a skilled workforce, and commitment across the organisational supply chain (Kohtamäki et al., 2020). While a U-shaped relationship is suggested—where benefits grow with higher digitalisation levels—traditional sectors like manufacturing or smaller firms may face barriers that impact this pattern based on their sector, size, or digital maturity (Kohtamäki et al., 2020).

DS transformations also affect internal operations and organisational culture, requiring shifts in how companies create and capture value (Favoretto et al., 2022). Investing in technology alone is insufficient; organisations need the correct practices, capabilities, human capital and effective operational processes to support DS's impact on efficiency and financial outcomes (Kohtamäki et al., 2020).

A successful DS transformation often means extending capabilities beyond company boundaries to include partners and stakeholders (Chirumalla et al., 2023). While DS's collaborative approach with customers and ecosystem partners strengthens customer loyalty and revenue stability (Favoretto et al., 2022), achieving this synergy can prove challenging. A mismatch between internal capabilities and ecosystem requirements can hinder DS initiatives, especially in sectors where collaboration processes are underdeveloped.

Chirumalla et al. (2023) stress the importance of incorporating DS value into financial reports and short-term performance metrics. Accurate metrics help companies track and justify DS investments, supporting long-term digital transformation. Kohtamäki et al. (2020) have shown that digitalisation can improve financial performance over a longer time period, such as higher ROA. Kohtamäki states that further research should be conducted to further understand DS's impact on an organisation's market value.

**6.3.7.3 Discussion of the Findings with Literature.** The research findings show that the balance between strategic technology investment and operational efficiency is similar. The Financial Services, Telecommunications and Technology Enablement groups emphasise allocating resources to technologies that streamline operations, reduce downtime and improve adaptability. Confirming the literature, Kohtamäki et al. (2020) and Favoretto et al. (2022) suggest that while DS can enhance operational efficiency and reduce costs, questions about value realisation and the long-term impact on performance remain unresolved.

In addition, both the Financial Services and Professional Services groups emphasise that it is challenging to realise digital initiatives' revenue potential fully. This difficulty in maximising returns confirms the literature that DS is complex and depends on extensive organisational commitment, skills development and an effective support system (Kohtamäki et al., 2020). The findings also reflect the risk of over investment, as highlighted by the Financial Services and Telecommunications groups, with concerns about sunk costs and sub-optimal financial decisions, confirming the literature on the need to align DS initiatives with a carefully structured value realisation strategy (Chirumalla et al., 2023).

The research findings suggest that different approaches are being used to overcome these performance challenges. The Telecommunications group provides premium services to customers through newer technologies, while the Professional Services

group highlighted the difficulties in achieving the expected revenue growth through digital services initiatives. These sector-specific approaches confirm the literature by Kohtamäki et al. (2020) stating that the benefits of DS can be uneven across industries, especially when there are sector-specific barriers or limited digital maturity.

The Technology Enablement group's use of system modularity and strategic reviews to reduce risk and increase efficiency is consistent with the literature's focus on the importance of DS beyond internal operations. Chirumalla et al. (2023) suggest that effective DS transformation involves extending capabilities to external ecosystem partners and stakeholders. This alignment of DS with external collaborations fosters customer loyalty, improving new revenue opportunities, although the literature acknowledges the potential challenges in achieving synergies when internal and external capabilities are not aligned (Favoretto et al., 2022).

The findings also show that measuring DS value, particularly in terms of ROI, is a challenge for all. While the Professional Services group emphasises customer experience as a key performance indicator, the other groups tend to use more operationally oriented metrics, which highlights different emphases in DS performance indicators. In line with Chirumalla et al. (2023), Kohtamäki et al. (2020) and Sousa-Zomer et al. (2020), the literature emphasises the importance of accurate DS performance metrics to track and justify DS investments, promote sustainable transformation, and highlight the need for further studies to fully understand the impact of DS on the company's financial performance and market value.

**6.3.7.4 Conclusion.** The findings confirm that the literature emphasises a balance between strategic technology investment and operational efficiency to drive digital servitisation. Similar to the literature by Kohtamäki et al. (2020) and Favoretto et al. (2022), the findings highlight the potential of DS to improve operations and reduce costs, while recognising the challenges in value realisation and sustainable performance metrics. Digital servitisation improves operations and customer strategies, but aligning capabilities and demonstrating sustainable value remains critical to the performance of digital servitisation. The nuance of the differences is the sectoral challenge of demonstrating performance metrics for technology investments, a gap that has not been fully explored in the literature.

This chapter concludes with a comparative analysis of the findings with the literature. The table below summarises the findings by the constructs of the research questions in

Chapter 2. When evaluating the themes of the findings with the literature, the table indicates whether the findings' outcomes were similar. Where a nuance of difference was found for a theme, the potential new sub-theme is presented and highlighted in green.

**Table 6.4: Results Summary of Revision of Chapter 6 Comparison**

| Research Question Construct | Theme | Findings with Literature Comparison | Existing theme OR **New sub-theme** |
|---|---|---|---|
| Contextual Factors, Challenges and Enablers of Digital Servitisation | Contextual Factors | Nuance of Difference | Technology and Societal Impact |
| | Key Challenges | Similar | Existing theme |
| | Key Enablers | Similar | Existing theme |
| Microfoundations for Digital Servitisation Transition | Digital Servitisation | Nuance of Difference | Technology and Cyber Security |
| | Microfoundations for Digital Servitisation | Similar | Existing theme |
| Microfoundations of Dynamic Capabilities | Microfoundations | Similar | Existing theme |
| | Dynamic Capabilities | Similar | Existing theme |
| | Microfoundations for Transformation | Similar | Existing theme |
| | Servitisation | Similar | Existing theme |
| Microfoundations Influence on Digital Servitisation Performance | Microfoundations Interdependencies | Similar | Existing theme |
| | Microfoundations Performance Combinations | Similar | Existing theme |
| | Digital Servitisation Performance | Nuance of Difference | Performance metrics |

Note. Authors own.

# CHAPTER 7: CONCLUSION

## 7.1 Introduction

The study's primary aim was to explore the microfoundations of dynamic capabilities, focusing on understanding the transition from servitisation to digital servitisation. In addition, the study aimed to develop a conceptual framework that includes the theoretical constructs and interactions that support a role in this transition. This framework provides a clear and practical way to understand the outcomes and their significance.

The research questions form the framework of the chapter, which also discusses the conclusions from the outcomes compared with existing literature. Each question was analysed for consistency with the literature and the research findings. The discussion highlights the differences between the findings and the literature and identifies potential contributions to the body of knowledge. Finally, the insights gained from this analysis are incorporated into a revised conceptual framework.

The chapter concludes with recommendations for managers facing similar transitions. It also presents the study's limitations and suggests future research. This chapter concludes the research study by summarising the study's key theoretical and principal conclusions.

## 7.2 Principal Theoretical Conclusion

### *7.2.1 Research Question 1*

“What is the relationship between firm characteristics, contextual factors for digital servitisation, and key challenges and enablers of digital servitisation transition?” (Chirumalla et al., 2023, p. 12).

Based on the work conducted in the study, the study has identified similarities in the following research outcomes regarding the contextual factors, challenges, and enablers of digital servitisation consisting of five themes. The research data was mapped to the individual themes during the data analysis. Two of these five themes, namely contextual factors and digital servitisation, were selected for discussion.

**7.2.1.1 Similarities with Extant Literature for RQ1.** The research outcomes are similar to the literature, highlighting the contextual factors of organisational and ecosystem capabilities and technological readiness factors as essential for digital

transformation Coreynen (2020) discussed in Chapter 2. The research outcomes are similar to those on the shift from product-based to service-based adaptation to drive market innovation and follow consumer technology trends, as Frank (2019) described in Chapter 2. Similarly, the research outcomes are similar to the literature by Baines (2020), that the decision to invest in digital systems and platforms is influenced by the costs associated with these technologies in the context of digital transformation in Chapter 2. Regarding the contextual factors for digital transformation, the research outcomes are similar to the literature by Coreynen et al. (2020) that stated cross-functional integration is essential for aligning strategic objectives with operational capabilities, as challenges are continuously encountered in achieving such integration, particularly in aligning legacy systems with strategic objectives. Similarly, Chirumalla et al. (2023) stated that external partnerships need to complement internal collaboration to overcome silo thinking, which is a barrier to innovation, in order to achieve both internal and external alignment that supports effective digital transformation.

The research outcomes on digital servitisation are similar to the literature on the strategic integration of technology and services, which is essential for driving transformation efforts and plays a crucial role in using digital tools to improve internal productivity, customer loyalty and security (Gebauer et al., 2021) in Chapter 2. Similarly, Chirumalla et al. (2023) emphasise that this mix of digitalisation and servitisation increases operational efficiency and strengthens customer engagement and organisational security. The research outcomes are similar to this perspective and show how digital servitisation acts as a key driver of effective transformation and addresses key organisational objectives by integrating advanced digital capabilities. The research outcomes are similar to the literature that describes the shift from product-centric to service-oriented models as a means to increase customer engagement and create customised interactions. Interaction, automation and personalisation are essential to an effective digital strategy (Frank et al. (2019). Similarly, Bocken and Geradts (2020) state that adopting service-oriented models supports sustainable profitability through automation and personalised services that contribute to operational efficiency and long-term resilience within a digital strategy.

This study identified several areas similar to the extant literature on contextual factors and digital servitisation, suggesting a potential contribution to the body of knowledge.

**7.2.1.2 Nuance of Difference to Extant Literature for RQ1.** The research outcomes regarding contextual factors revealed a nuance of difference to literature. The

research concludes that organisations' approaches to digital transformation strategies should consider technological readiness for societal impact. While some aspects of digital transformation focus on adapting to technological advances and societal change, concerns about the broader impacts of AI and digitalisation from a business operations perspective have far-reaching implications for employment and social structures. The importance of internal and external factors (contextual factors) that influence organisational change towards digital servitisation is discussed, and the impact of technology on society is briefly mentioned by Baines et al. (2020).

The research outcomes extend beyond the literature that examined the contextual factors and concluded that technology implementation has broader technological and social impacts. This study identified a nuance of difference, and a potential new subtheme of technology and societal impact has been suggested as a potential refinement of the literature.

The research outcomes regarding digital servitisation revealed a nuance of difference to literature. While cybersecurity is recognised as a crucial element of digital servitisation, this study shows that it plays different strategic roles depending on the context. Cybersecurity is essential for maintaining digital services and serves as a strategic advantage that enhances the customer experience and supports the organisation's stability. Chirumalla et al. (2023) generally associate security with other fundamental elements such as corporate culture, human resources, organisational structure and financial feasibility in implementing digital servitisation solutions.

The research outcomes extend beyond the literature that examined the cybersecurity importance when considering and implementing digital servitisation initiatives. This study identified a nuance of difference, and a potential new subtheme of technology and societal impact has been suggested as a potential refinement of the literature.

Crane explained that studying the same phenomenon in a new context can be complex, but such research must go beyond describing the setting. Instead, it should leverage the unique context to offer meaningful theoretical insights. These insights may involve developing new theories, refining existing theory ones, or testing theories to enhance the current framework and provide a contextualised understanding (Crane et al., 2016).

**7.2.1.3 Distinct Differences to Extant Literature for RQ1 Themes**. There were no distinct differences between the research findings and the literature relating to Research Question 1.

**7.2.1.4 Conclusions for RQ1.** Based on the work conducted for the study, the theoretical and principal conclusions from the research outcomes on research question 1 in relation to the selected discussion topics on contextual factors and digital servitisation were classified according to similarities, nuances of differences and distinct differences. The study identified areas of similarity with the extant literature on organisational capabilities, technology readiness, product and service-oriented models and the strategic role of digital servitisation. This is a potential addition to the body of knowledge on contextual factors and digital servitisation.

The research outcomes revealed nuances of differences in contextual factors and digital servitisation that were not addressed in the existing literature. Therefore, these were included in the revised conceptual framework as a potential new sub-theme, technology and social impact, under the theme of contextual factors and cybersecurity in the context of digital servitisation as potential refinements to the body of knowledge.

### *7.2.2 Research Questions 2*

“What are the interdependencies among different microfoundations? How do they affect the performance of digital servitisation? How does the combination of certain microfoundations affect the performance of digital servitisation?” (Chirumalla et al., 2023, p. 11).

Based on the work conducted, the study found similarities in the research outcomes themes in terms of microfoundations, dynamic capabilities, transitional microfoundations for digital servitisation, servitisation, microfoundation interdependencies, microfoundations performance combinations and digital servitisation performance. The research data was categorised into individual themes during the data analysis. Three of these seven themes, namely transitional microfoundations for digital servitisation, microfoundations interdependencies and digital servitisation performance were selected for discussion.

**7.2.2.1 Similarities with Extant Literature for RQ2.** The research outcomes on transitional microfoundations for digital servitisation are similar to the literature regarding the importance of agile co-creation processes in driving customer-centric approaches

and improving responsiveness to external demands, underscoring the need for iterative, flexible adjustments within these processes Chirumalla et al. (2023). Flexibility, adaptability, and the optimisation of internal resources by integrating these resources with external processes through technology are crucial for promoting organisational agility and adaptability, with a central coordination effort to manage these integrations effectively Favoretto et al. (2022). The role of partnership leadership and governance structures is similar to strategic partnerships, improving decision-making, enabling access to essential capabilities, and supporting collaborative governance in navigating digital landscapes Chirumalla et al. (2023). The different approaches to digital systems strategies, focusing on building internal capabilities and long-term digital platforms that foster connectivity and integration with external partners, are essential for collaboration and sustainable growth Frank et al. (2019) and Sousa-Zomer et al. (2020). Finally, the research concludes that strategic adaptability is required as organisations must position themselves as agile partners capable of responding quickly to market changes, with iterative, flexible processes seen as essential for competitiveness in dynamic environments, reinforcing adaptability as a core requirement Melián-Alzola et al. (2020).

The research outcomes on microfoundations interdependencies are similar to the literature that emphasises effective change management and stakeholder coordination as critical factors for the interdependencies of microfoundations in the management of physical products, service innovations and digital technologies (Chirumalla et al., 2023). Aligning internal operations with business and technology teams also supports the role of organisational functions in transformation (Frank et al., 2019). In addition, the emphasis on consumer-centric product development and continuous innovation drives innovation by meeting customer needs (Kohtamäki et al., 2020). The research outcomes are also similar to the literature that indicated the adoption of automation and artificial intelligence by end users is essential in achieving a high level of digitalisation (Chirumalla et al., 2023). In addition, research outcomes focus on operational alignment and balancing stakeholder needs with market pressures, while others prioritise communication and the use of technology, reflecting the stages of servitisation in different industries (Frank et al., 2019). Furthermore, this finally prioritises continuous product development to maintain competitiveness while sustaining continuous innovation (Chirumalla et al., 2023). The importance of service offerings in increasing business performance through digitalisation (Kohtamäki et al., 2020).

The research outcomes regarding the performance of digital servitisation (DS) are similar to the literature suggesting a balance between strategic technology investments and

operational efficiency in terms of resource allocation to technologies that streamline operations, reduce downtime and improve adaptability (Kohtamäki et al., 2020; and Favoretto et al. 2022). While DS can increase operational efficiency and reduce costs, the literature and research findings reflect unresolved questions about value realisation and long-term impact on performance. Furthermore, research outcomes are similar to the literature regarding realising the revenue potential of digital initiatives, which require significant organisational commitment, capability development and an effective support system (Kohtamäki et al., 2020). Concerns about the risk of overinvestment are also reflected in the need to align DS initiatives with a structured value realisation strategy to mitigate risks such as sunk costs and suboptimal financial decisions (Chirumalla et al., 2023). Research outcomes regarding organisations using different approaches to address DS performance challenges and DS benefits vary across industries, especially when sector-specific barriers or limited digital maturity are present (Kohtamäki et al., 2020). In addition, research outcomes support the literature regarding the modularity of systems and strategic reviews to manage risk and increase efficiency (Chirumalla et al., 2023; and Favoretto et al., 2022) that DS transformation goes beyond internal operations and involves external ecosystem partners to drive customer loyalty and new revenue opportunities. The research outcomes are similar to the literature, which shows that measuring DS value is a challenge when it comes to customer experience as a key performance indicator and operational metrics. Chirumalla et al. (2023), Kohtamäki et al. (2020), and Sousa-Zomer et al. pointed to different in DS performance indicators that required accurate DS performance metrics to justify DS investments for sustainable transformation.

**7.2.2.2 Nuance of Difference to Extant Literature for RQ2.** The research outcomes on digital servitisation (DS) performance revealed a nuance of difference in the literature. The outcomes of DS performance measurement vary widely across sectors, with some industries prioritising customer experience as the primary KPI, while others focus on operational metrics such as efficiency gains and cost reductions. These differences in DS performance metrics suggest that different sectors adopt tailored approaches to align DS initiatives with their unique strategic objectives and operational requirements rather than adhering to a standardised model. The standardised application of DS performance measures is discussed in the literature. Kohtamäki et al. (2020) and Chirumalla et al. (2023) emphasise using consistent DS metrics to validate investments and ensure consistent measurement across industries.

The research outcomes extend beyond the literature and suggest that sector-specific key performance indicators are essential for accurately aligning DS initiatives with the unique performance objectives of each industry. This study identified a nuance of difference suggesting that DS performance metrics should be tailored to the industry's specific needs rather than relying on a one-size-fits-all approach. This study identified a nuance of difference, and a potential new subtheme of sector focus has been suggested as a potential refinement of the literature.

**7.2.1.3 Distinct Differences to Extant Literature for RQ2 themes.** There were no distinct differences between the research findings and the literature relating to Research Question 2.

**7.2.2.4 Conclusions for RQ2.** Based on the work conducted for this study, the theoretical and principal conclusions drawn from the research outcomes confirm similarity to literature. The selected discussion topics for research question 2 provide valuable insights into the themes of transitional microfoundations for digital servitisation, microfoundations interdependencies, and digital servitisation performance. The research outcomes are similar to the literature's, such as how agile co-creation processes support customer-centric approaches. These insights contribute to the body of knowledge confirming the literature on the role of transitional microfoundations and emphasising the critical interdependencies that underpin effective digital servitisation.

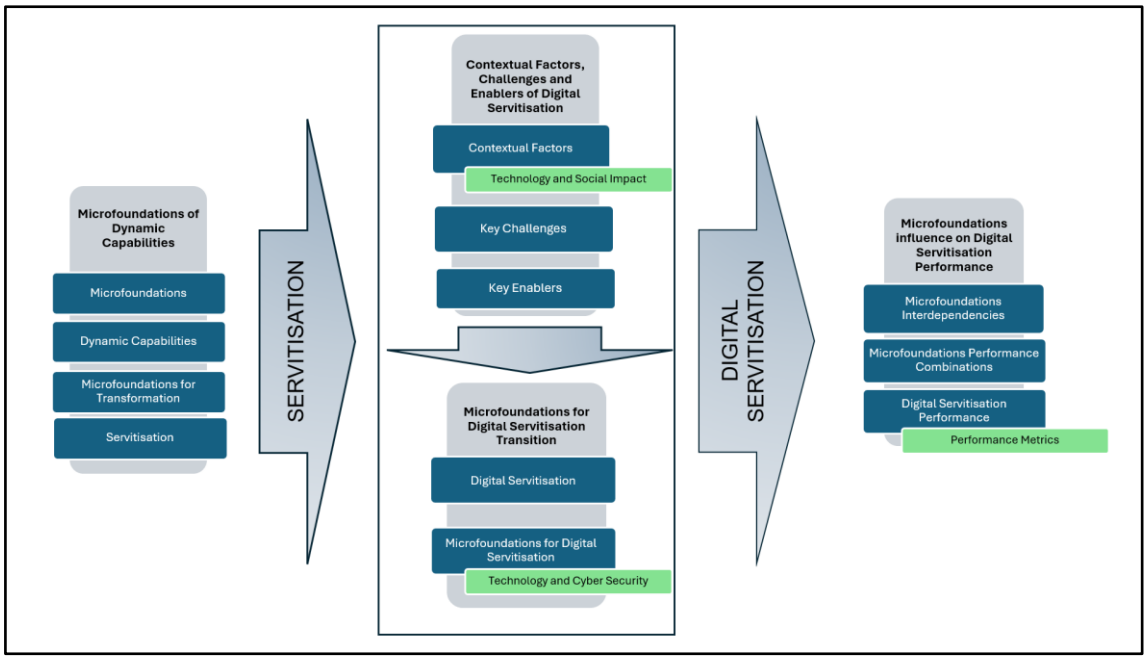


**Figure 7.1: Amended Conceptual Framework**

Note: Author's own.

## 7.3 Research Contribution

This section outlines the research contribution, presenting potential contributions, refinements, or extensions to the body of knowledge on dynamic capabilities microfoundations for digital servitisation. It demonstrates how the study's outcomes provide meaningful insights into the academic discourse on digital transformation.

### *7.3.1 Additions to the Body of Knowledge*

Based on the work conducted in this study, there appears to be a potential contribution to the body of knowledge in digital servitisation. The research outcomes are similar to those of extant literature in several key themes, suggesting that this study may offer potential additions to current understanding in this field.

The themes explored include contextual factors, microfoundations for the transition to digital servitisation (DS), microfoundations for dynamic capabilities and microfoundations for DS performance. Market conditions, technological readiness and organisational support were contextual factors influencing digital transformation outcomes. Microfoundations are considered prerequisites for the transition to digital business models and represent the core competencies required for effective transformation. Adaptability and a service-orientated approach are essential dynamic capabilities that drive innovation and help maintain competitive advantage. The customisation of performance metrics, with industry-specific indicators, performs a critical role in aligning DS initiatives with strategic objectives.

Whilst the study's findings are similar to those of the extant literature, this research was conducted in a different setting with a specific scope and focus. Therefore, the study contributes to the body of knowledge by presenting that the findings from previous studies are also relevant in other business environments, highlighting the strength and usefulness of these findings in different settings.

### *7.3.2 Potential Refinements to the Body of Knowledge*

Based on the work done in this study, there appears to be a potential contribution to the body of knowledge that is a nuance of difference. Potential refinements are the subthemes of technology and social impact among contextual factors and technology and cybersecurity within digital servitisation, which are areas extending beyond the extant literature. In addition, sector-specific measurements for DS performance metrics

are needed. These outcomes present a refined understanding of digital servitisation and suggest potential contributions to the body of knowledge.

### *7.3.3 Potential Extensions to the Body of Knowledge*

There were no potential extensions.

## 7.4 Recommendations for Management and Other Stakeholders

This section provides management and stakeholders with practical suggestions for navigating digital transformation. Contextual factors, technology considerations, and performance metrics for digital servitisation are the main themes on which the recommendations are divided. Based on the study's findings, they are recommended for sector opportunities and challenges. Based on business-driven insights, these tactics provide a roadmap for coordinating transformation initiatives with business objectives, increasing agility and improving quantifiable outcomes. The suggestions are relevant to the sectors researched and provide insights that will be helpful in practice.

### *7.4.1 Recommendations on Contextual Factors*

- Consider technology readiness and societal impact in digital transformation: Management should consider technology readiness and the broader societal impact of its digital transformation strategies, such as the potential impact on employment and social structures. Incorporating these factors into digital initiatives helps organisations to pursue innovation responsibly and align transformation goals with broader social responsibility.
- Tailored cybersecurity strategies to industry needs: As cybersecurity plays a different strategic role depending on the industry, management should customise their cybersecurity approaches. Cybersecurity efforts should focus on protecting customer-facing technologies in industries where customer trust is critical. Cybersecurity should be prioritised in industries where system resilience and internal protection are paramount. Prioritising cybersecurity is critical to building customer trust and strengthening competitive position.

### *7.4.2 Recommendations on Digital Servitisation*

- Engage stakeholders in co-creation initiatives: To drive customer-centric strategies, management should engage both internal teams and external partners in co-creation initiatives. Applying industry-specific agile approaches to fulfil customer needs encourages innovation, ensures alignment with market

trends and strengthens customer relationships. Regular stakeholder workshops, for example, can help identify evolving customer needs, leading to improved service offerings and sustainable growth.

- Develop core capabilities for adaptability: To respond to market changes and technological advances, management should build core capabilities that foster flexibility, creativity and continuous innovation. Investing in these core competencies enables organisations to adapt quickly to change, maintain a competitive advantage and support ongoing transformation. This approach can include training programmes that promote innovative thinking and internal processes that enable rapid adaptation to new developments.

#### *7.4.3 Recommendations on Digital Servitisation Performance*

- Create industry-specific performance metrics: Because performance measurement varies across industries, organisations should develop KPIs aligned with their strategic goals and operational priorities. For example, industries focusing on customer satisfaction prioritise customer retention and engagement. In contrast, industries focusing on operational efficiency use KPIs focusing on reducing costs and increasing productivity. By customising performance metrics, organisations can ensure that digital transformation initiatives support each company's strategic objectives.
- Evaluate digital transformation initiatives regularly: Management should assess and review digital transformation efforts to align them with business objectives and changing industry needs. This ongoing assessment can promote transparency and improve decision-making to avoid overinvestment, reduce the risk of sunk costs and ensure digital initiatives deliver tangible value. Involving cross-functional teams in these reviews can foster cross-departmental alignment and ensure a comprehensive approach to strategic priorities.

### 7.5 Limitations of the Research

The limitations of the study are discussed in this section. The limitations of the research design and methods were discussed in Chapter 4 (see section 4.10 on page 59).

This research had the following boundaries.

- This study was conducted in South Africa and did not consider any other country contexts.

- This study explored the following sectors: Financial Services, Telecommunications, Professional Services, Technology Enablement Services, and Manufacturing, but did not consider other sectors.
- The research focused on the microfoundations of dynamic capabilities but did not go into detail on the emerging sub-themes of Societal impact, Cybersecurity and Performance metrics

### 7.6 Suggestions for Future Research

The study's physical scope was limited to organisations located in South Africa; further research can be conducted in other countries.

The research covered the following sectors: Financial Services, Telecommunications, Professional Services, Technology Enablement Services, and Manufacturing. Future research in other sectors is suggested.

The theoretical scope of the study was limited in detail. The following sub-themes were identified in research and could not be explored in detail; therefore, further research could be done to explore these in further detail.

The sub-themes were:

- Technology and Societal impact
- Technology and Cybersecurity
- Performance Metrics

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# APPENDICES

## Appendix A: Semi-Structured Interview Protocol

| Question No | Interview Question |
|---|---|
| | Little q1: Please tell me about your experience with digital technologies in service offerings? |
| 1 | Please tell me about your understanding of how the organisation uses digital technologies in its service offerings? |
| 2 | And what is your understanding of the expected outcomes of this use of digital technologies in service offerings? |
| 3a | **This question has three parts to it, and I will ask each part one after the other**<br><br>**Part 1:**<br>Please tell me about your understanding of the external factors influencing the move towards digital service offerings? |
| 3b | **Part 2:**<br>Please tell me about your understanding of the internal factors influencing the move towards digital service offerings? |
| 3c | **And now I will move on to the third part of the question**<br><br>**Part 3:**<br>How are the internal and external factors related? |
| 4a | **This question has three parts to it, and I will ask each part one after the other**<br><br>**Part 1:**<br>To the best of your knowledge, please could you tell me about how these external factors influenced the outcomes of digital service offerings? |
| 4b | **Part 2:**<br>To the best of your knowledge, could you please tell me how these internal factors influenced the outcomes of the digital service offerings? |
| 4c | **Part 3:**<br>How did these different factors, in combination, influence the outcomes of the digital services transition? |
| 5a | **This question has two parts to it, and I will ask each part one after the other**<br><br>**Part 1:**<br>In your experience, could you tell me about the challenges while implementing digital service offerings? |
| 5b | **Part 2:**<br>Following on from the previous question about the challenges, can you tell me about your experience of how the organisation has overcome these challenges? |
| 6 | And what has the organisation actually achieved in the outcomes from the digital service offerings? |
| | Little q2: Just to round it off, how do you see this developing going forward? |
| *Probing q1:* I wonder if you can tell me more about that?<br>*Probing q2:* I wonder if you can give me an example of that?<br>*Probing q3:* Please could you illustrate with an example?<br>*Probing q4:* I wonder if you can tell me what that means? | |

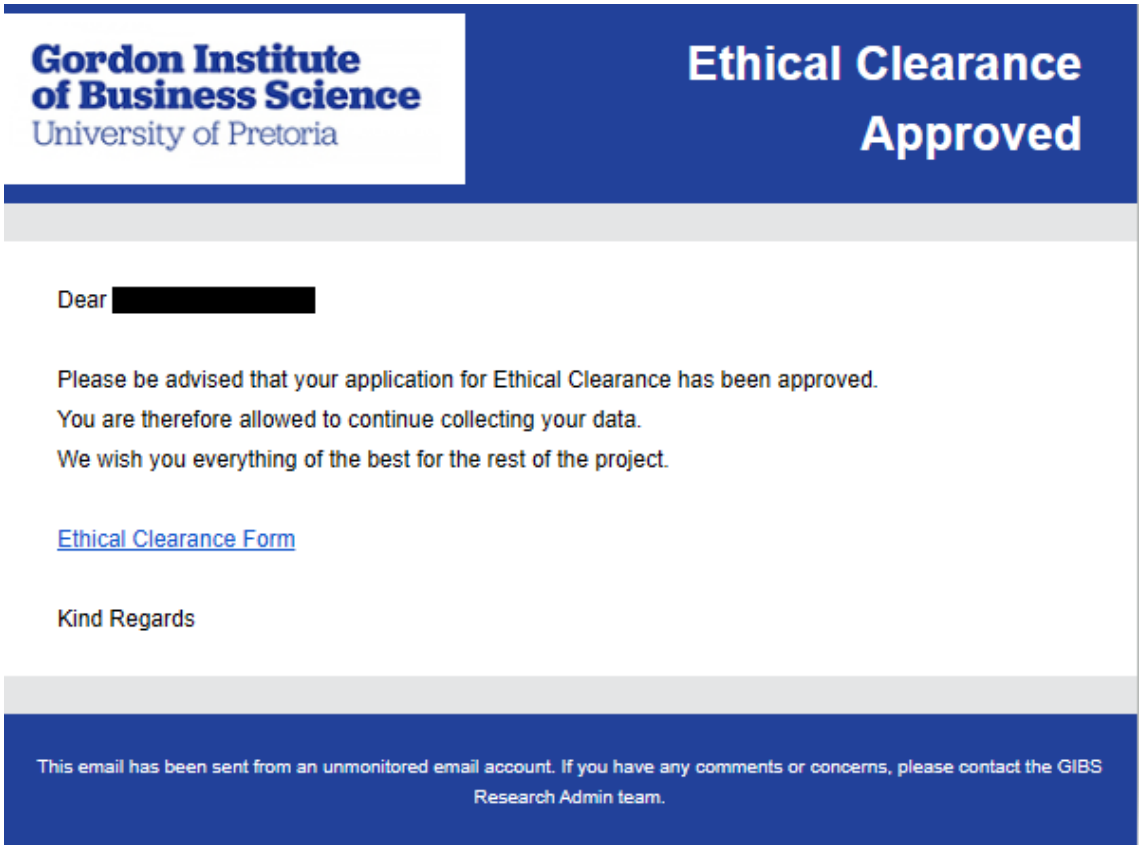
Note: Author's own.

# Appendix B: Consistency Matrix

| RESEARCH QUESTIONS AND PROSITIONS | LITERATURE REVIEW | DATA COLLECTION TOOL | DATA ANALYSIS |
|---|---|---|---|
| **Research question 1:**<br><br>What is the relationship between firm characteristics, contextual factors for digital servitisation, and key challenges and enablers of digital servitisation transition? | Chirumalla et al. (2023);<br>Frank et al. (2019);<br>Kohtamäki et al. (2020);<br>Baines et al. (2022);<br>Coreynen et al. (2020) | Semi-Structured Interview.<br><br>Questions and Sub-questions 1, 2, 3, and 4 | Thematic analysis to identify contextual factors, challenges and enablers through coding and theme development |
| **Research question 2:**<br><br>What are the interdependencies among different microfoundations? How do they affect the performance of digital servitisation? How does the combination of certain microfoundations affect the performance of digital servitisation? | Chirumalla et al. (2023);<br>Frank et al. (2019);<br>Wilden et al. (2019);<br>Kohtamäki et al. (2020);<br>Sousa-Zomer et al. (2020);<br>Favoretto et al. (2022) | Semi-Structured Interview.<br><br>Questions and Sub-questions 4, 5, and 6 | Thematic analysis to identify performance, combinations and interdependencies of microfoundations through coding and theme development |

Note: Author's own.

# Appendix C: Ethical Clearance Approval



Gordon Institute of Business Science
University of Pretoria

Ethical Clearance Approved

Dear [redacted]

Please be advised that your application for Ethical Clearance has been approved.
You are therefore allowed to continue collecting your data.
We wish you everything of the best for the rest of the project.

Ethical Clearance Form

Kind Regards

This email has been sent from an unmonitored email account. If you have any comments or concerns, please contact the GIBS Research Admin team.

# Appendix D: Individual Consent Form

**Informed consent for interviews**

***Note:*** *This standard informed consent letter to be used in qualitative interviews, must be separate from interview guide, must be signed before the interview commences. The signed form must be stored separately from the data collected*

I am conducting research *about Digital Transformation in Dynamic context*. Our interview is expected to last 60 minutes, and will help us understand *What is the relationship between firm characteristics, contextual factors for digital servitisation, and key challenges and enablers of digital servitisation transition*?

**Your participation is voluntary and you can withdraw at any time without penalty**.

By signing this letter, you are indicating that you have given permission for:

• The interview to be recorded;

• The recording to be transcribed by a third-party transcriber, who will be subject to a standard non-disclosure agreement;

• Verbatim quotations from the interview may be used in the report, provided they are not identified with your name or that of your organisation;

• The data to be used as part of a report that will be publicly available once the examination process has been completed; and

• All data to be reported and stored without identifiers.

If you have any concerns, please contact my supervisor or me. Our details are provided below.


Researcher name:

Email: 23023202@mygibs.co.za

Phone:

Research Supervisor name: Dr. Jill Bogie

Email: BogieJ@gibs.co.za

Phone


Signature of participant: _____

Date: _____

Signature of researcher: _____

Date: _____

# Appendix E: Certificate of Additional Support

**15. APPENDIX 6 CERTIFICATION OF ADDITIONAL SUPPORT**

(Additional support retained or not - to be **completed by all students)**

***Please note that failure to comply and report on this honestly will result in disciplinary action***

I hereby certify that (please indicate which statement applies):

- *I DID NOT RECEIVE any additional/outside assistance (i.e. statistical, transcriptional, and/or editorial services) on my research report:*
  .....

- *I RECEIVED additional/outside assistance (i.e. statistical, transcriptional, and/or editorial services) on my research report* Language and Technical editing
  .....

If any additional services were retained– ***please indicate below which:***

☐ ***Statistician***

☐ ***Transcriber***

☒ ***Editor***

☐ ***Other (please specify)*** .....

***Please provide the name(s) and contact details of all retained:***

NAME: Jeanne Enslin .....

EMAIL ADDRESS: jeanneenslin@gmail.com .....

CONTACT NUMBER: .....

TYPE OF SERVICE: English Language editing .....

NAME: Ronel Gallie .....

EMAIL ADDRESS: ronelgallie@gmail.com .....

CONTACT NUMBER: .....

TYPE OF SERVICE: Technical editing .....

# Appendix F: Codes

| # Codes | 1st Order Codes | 1st Order Categories |
|---|---|---|
| 7 | Achieving Cost Efficiency Through Digital Self-Service<br>Business emphasis on cost efficiency and scalability through digital transformation<br>Cost optimisation and realignment<br>Cost Reduction and Workforce Optimization<br>Cost Savings and Problem-Solving Through MVPs<br>Cost savings with Linux over Windows due to licensing<br>Significant Cost Savings Through Productivity Enhancements | 1st Order Category: Cost Optimisation |
| 21 | Cost and Security Prioritisation for Different Demographics<br>Cultural Agile of Work<br>Cultural maturity<br>Culturally grounded using Technology<br>Embracing Failure and Iteration for Effective Project Management<br>Failure to recalibrate for new generations<br>Gen X faced scarcity of information access<br>Gen X: Forgotten generation.<br>Gen X: Neutral generation with no strong defining features.<br>Gen Z is a unique generation<br>Generational gap affecting internal adoption<br>Long-term employees resisting change due to comfort<br>Millennials were first to experience knowledge abundance<br>Multi Faceted adaption and learning<br>On-demand culture driving change<br>Propensity of younger generations to adopt change<br>Resistance to change due to complacent culture<br>Resistance to platform adoption due to existing informal relationships<br>Reversion to Legacy Processes Despite New Systems<br>Service providers' reluctance to disrupt established relationships<br>Significance of generational shift | 1st Order Category: Cultural and Generational Influences |

| | | |
|---|---|---|
| 44 | 24/7 Accessibility for Enhanced Customer Convenience<br>Challenges in Customer Adoption and Engagement<br>Client preference for comprehensive, integrated solutions<br>Concerns over customer commodification<br>Consistent Service Quality in Remote Areas<br>Customer delight as a soft metric<br>Customer Demand for Ubiquitous Access<br>Customer Engagement and Self-Service Flexibility<br>Customer Expectation of Seamless Interaction<br>Customer self service<br>Customer Switching Due to Experience Quality<br>Customer-Centric Service Design<br>Customers find upgrade costs frustrating when not directly requested<br>Delighting the end customer<br>Enhanced Customer Experience and Faster Issue Resolution<br>Enhancing Existing Digital Offerings for Clients<br>Failure to deliver expected customer outcomes<br>Impact of poor digital service experiences on customer perception<br>Impact of Technology on Physical and Digital Customer Experience<br>Increased client value from technology design<br>Key Aspects of Customer Experience: Usability, Cost, and Security<br>Link Between Employee Experience and Customer Experience<br>Mapping Customer Support Processes for Digital Services<br>Monitoring External Factors for Strategic Alignment<br>mproving customer competency through managed services<br>Multi-Channel Digital Engagement<br>Need for deeper customer understanding<br>Negative Feedback from Existing Users<br>Neglect of customer needs due to internal and external pressures<br>Positive Feedback from New Users<br>Predictability is key to a good customer experience<br>Predictible outcomes leads to customer satisfaction | 1st Order Category: Customer Experience |

| | | |
|---|---|---|
| | Providing One-Stop Shop for Customer Needs<br>Real-time hands-on guidance<br>Seamless Integration of Digital and Physical Experiences<br>Self-Service Portals for Enhanced Customer Access<br>Selling trust over software<br>Shifting customer expectations towards digital self-service<br>Successful implementation of chatbots in customer support<br>Technology and customer experience frameworks must align<br>Technology enablement for optimal customer experience<br>Technology outcome leads to Customer satisfcation<br>Varied client use of product features<br>Zero trust as a security model | |
| 11 | Agility of Smaller Organisations<br>Appeal of innovation and modern business ventures<br>Becoming an industry leader through disruption<br>Concerns about sharing IP and customer base<br>Consumer-driven changes, not boardroom decisions<br>Consumers driving value proposition through data package arbitrage<br>Desire for business relevance and excitement.<br>Driven culture facilitates faster transformation<br>Insurtechs and Fintechs create frictionless experience from start<br>Proactive AI integration for business advantage<br>Shaking up the industry | 1st Order Category: Disruption and Industry Leadership |
| 4 | Branches as technology training centers<br>Education across the organization as key<br>External learning through exposure to global institutions like London Business School. | 1st Order Category: Education and Inclusivity |

| | | |
|---|---|---|
| | Inclusivity in transformation processes | |
| 10 | Collaborative decision-making process for tech upgrades<br>Developer input drives technology choices<br>Employee Frustrations Impacting Customer Experience<br>Empowering Managers with Self-Service Tools<br>Engaging employees at the coal face of the problem<br>Increased job complexity due to digitalisation<br>People-Driven Business Models in Workforce Industry<br>Productivity pressure on employees due to digital changes<br>Service mindset fostering internal collaboration<br>Support and Engagement During Transitions | 1st Order Category: Employee Engagement |
| 28 | Broader Societal Considerations Affecting Service Consumption<br>Consumer demand driving tech evolution<br>Distrust in the South African market context<br>Environment dictates value proposition<br>Epidemic accelerated digital<br>Expectation for Advanced Network Access (e.g., 5G)<br>External Availability and Cost Dynamics<br>External change energy influencing organisations<br>External factors are less controllable but avoidable<br>External factors as uncontrollable and unpredictable<br>External factors determining the speed of internal transformation<br>External factors driving industry transformation speed<br>External factors driving trends and outcomes<br>External influence shaping transition and transformation<br>External Market and Cost Considerations<br>Impact of Economic and Technological Access on Product Offerings<br>Impact of policy and restrictions<br>Impact of world-changing events on digital transformation<br>Increased Digital Literacy Due to Macro Events<br>Influence of large multinational OEMs and hyperscalers<br>Influence of large powerhouses<br>Influence of the environment on digital adoption<br>Learning from international tech leaders like Ping An<br>Manual Data Entry for Production Control Systems | 1st Order Category: External Influences |

| | | |
|---|---|---|
| | Political factors hindering digital adoption<br>Power and influence of large global OEMs<br>Power of political, societal, and corporate influence digital service offerings<br>Trends and analyst reports influencing organisations | |
| 11 | Budget limitations for necessary changes<br>Concerns Over Cost and Efficacy of Proposed Solutions<br>Conflict between building skills and corporate cost-cutting efforts<br>Cost-effective cloud software approach<br>Dilemma of Sunk Cost and Future Direction<br>High Costs of Bespoke Production Monitoring Software from OEMs<br>Increased cost per employee due to higher skill requirements<br>Investment in AI tools<br>Negative Impact of Ineffective Systems<br>Trade-Offs Between Short-Term Savings and Long-Term Costs<br>Unrealised Benefits and Revenue Shortfalls | 1st Order Category: Financial and Budgetary Constraints |

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|---|---|---|
| 29 | AI Projects Driven Primarily by Cost-Saving Goals<br>AI-Driven Cost Efficiency in Service Management<br>Assessing Revenue Impact and Business Profitability<br>Assumptions of digital transformation leads to cost savings<br>Client investment required for continuous system updates<br>Cost comparison of cloud vs. on-premises<br>Cost-efficiency of manual labour vs. cloud infrastructure<br>Difficulty in calculating ROI for long-term digital investments<br>Digitalisation and the ability to monetise<br>Evaluating Platform Investment for ROI<br>Financial benefits as a driver of transition<br>Financial Stability Influencing Strategic Investments<br>Focus on maximizing return on investment (ROI)<br>Improving Cost-to-Income Ratio and ROI<br>Initial Investment vs. Long-Term Cost Efficiency<br>Investment timing as a factor in transition<br>Linking Digital Initiatives to Company Drivers<br>Maximizing the return on previous investments (sweating assets)<br>Ongoing costs due to dual platform maintenance<br>Platform strategy for multi-product positioning and margin capture<br>Pressure from cost reduction and efficiency<br>Prioritisation of Digital Initiatives Based on ROI<br>Profit-driven motivations in digital transformation<br>Promise of Technology delivery and Measurement<br>Provider Focus: Security, ROI, and Meeting Customer Expectations<br>Shareholder focus on maximizing value and profitability through digital services<br>Shareholder focus on short-term cost vs. long-term digital benefits<br>Short-Term vs. Long-Term Cost Implications of Software Models<br>Willingness to Pay for Value-Driven Technology Solutions | 1st Order Category:<br>Financial Drivers |

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|---|---|---|
| 8 | Background in Mechanical Engineering and Telecommunications<br>Challenges in global expansion<br>Conflict between people-driven growth and technology-driven efficiency<br>Financial services transforming faster than manufacturing<br>Hybrid service model required due to industry-specific needs<br>Industry-Specific Digital Solutions for Customer Access<br>Shift from financial to technology companies as powerhouses<br>Technological shift in the world's leading companies | 1st Order Category: Industry-Specific Transformation |
| 22 | Business case driving automation despite workforce impact<br>Central idea creation from leadership<br>Collaborative focus on achieving business-led outcomes<br>Collective decision-making ensures technology relevance<br>Collective decision-making in tech strategy<br>Complexity in Project Execution Due to Hierarchical Conflicts<br>Global price pressure<br>Importance of a Unified Vision and Strategic Initiatives<br>Importance of Comprehensive Evaluation Before Decision-Making<br>Influence of powerful stakeholders on service direction<br>Leadership as blockers of transformation<br>Leadership as role models for transformation<br>Leadership buy-in as a critical factor<br>Leadership dynamics influencing outcomes<br>Long-Term Impact of Architectural Decisions<br>Market reshaped value proposition, not telcos<br>Misalignment between client needs and service offerings<br>Risk Appetite and Strategic Customer Targeting<br>Risks of Long-Term Commitment to Cost Models<br>Shareholder-driven strategic shift<br>Strategic decision<br>Unaddressed business process transformation | 1st Order Category: Leadership and Decision-Making |
| 2 | Balancing innovation with short-term financial targets<br>Leadership’s financial mindset driving technology decisions | 1st Order Category: Leadership and Financial Decisions |

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|---|---|---|
| 8 | Evolution of telephony driven by data value<br>Exposing leadership to global innovations and trends<br>Future-focused collaborative approach to unlock opportunities<br>Google NBU technology impact<br>Leadership role in driving innovation in consumer space<br>nnovation challenges with staying ahead of trends<br>Shift in insurance model from sales to consumer-driven demand<br>Visionary Leadership Driving Transformation | 1st Order Category: Leadership and Innovation |
| 8 | Balancing customer input with innovation in service offerings<br>Choosing complex solutions over simpler alternatives<br>Digitalisation value identification and selection for improvement<br>Lack of clarity in delivering a cohesive digital service ecosystem<br>Leadership's lack of understanding of technology<br>Product Market fit timing<br>Skillset as positional power without execution<br>Speed and Efficiency Gains Through Digital Transformation | 1st Order Category: Leadership and Technology Understanding |
| 11 | Complexity of Integrating Legacy and New Digital Services<br>Developing Digital Offerings with Legacy Systems<br>Historical Reliance on Manual Processes<br>Lack of documentation and understanding of legacy systems impedes challenging new ideas<br>Legacy ERP Systems Lacking Modern Connectivity<br>Legacy organizations face challenges due to their size and age<br>Legacy systems and outdated programs struggling to keep pace<br>Legacy systems limiting digital potential<br>Outdated Technology and Knowledge Gaps<br>Personalisation challenges due to legacy systems<br>Significant Accomplishments in Organisational Transformation | 1st Order Category: Legacy Systems and Challenges |

| | | |
|---|---|---|
| 12 | Adopting a mindset shift for transformation<br>Career-Based Resistance to Technological Change<br>Challenges and Failures as Part of the Process<br>Confidence in eventual success despite challeng<br>Embracing digital transformation for societal benefits<br>Focus on product integrity over individual client needs<br>Mental shift in project teams<br>Misconceptions of business and technology services<br>Older developers find it harder to keep up with rapid tech changes.<br>Outcomes Based Agile Approach<br>Preference for Modern User Interfaces<br>Shift from customer-centric to product-centric approach | 1st Order Category: Mindset Shift |
| 16 | Balancing efficiency and maintaining necessary skill-building efforts<br>Continuous patching to keep up with industry standards<br>Decision-Making on Infrastructure Capacity Expansion<br>Difficulty in scheduling maintenance for global clients<br>Ensuring Network Coverage and Capacity<br>Ensuring Robust Service Infrastructure for Customer Experience<br>Ensuring the right platforms and processes are in place<br>Improved Responsiveness to Issues<br>Internal focus on impactful, scalable, and cost-effective service delivery<br>Making the business lean and efficient<br>Optimizing business operations end-to-end<br>Priority on Efficiency and Automation Before Customer Experience<br>Reduced downtime and scheduled maintenance<br>Reduced maintenance risk<br>Simplicity in design approach<br>Tapping into organisational intellectual property (IP) | 1st Order Category: Operational Efficiency |

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|---|---|---|
| 17 | Commitment to Full Engagement in Service Provision<br>Consumer demand for culturally relevant insurance products<br>Consumers repurposing products for personal needs<br>Decline in Data Preparation Roles, Shift to Decision-Making<br>Designing for customer value<br>Digital products aligned with community-centric values<br>Digital transformation creating unknown future opportunities<br>Ensuring Secure and Seamless Customer Experience<br>Excitement and Anticipation for Future Developments<br>Internal factors based on organizational positioning (adopter, disruptor, follower)<br>Missed opportunity to redeploy resources into new service areas<br>Opportunities to partner for technology but difficult to achieve<br>Rapid uptake of consumer-understood FinTech products<br>Social construct product tailored to local context<br>Supporting larger organisation's digital service improvements<br>Turning a large organization is slower and more internally focused<br>Unified Approach for Integrated Business Success | 1st Order Category: Organisational Positioning |
| 12 | Balancing short-term labour cost vs. long-term technology benefits<br>Core expectations of digital transformation<br>Distinction Between Basic and Transformative Technology Use<br>External stakeholders' perceptions of technology opportunities<br>Failure to rethink processes hinders digital transformation success<br>Future jobs far beyond our understanding due to digital transformation<br>Misalignment Between AI Expectations and Practical Application<br>Misrepresented digital transformation | 1st Order Category: Perceptions of Digital Transformation |

| | | |
|---|---|---|
| | People get excited by the terminology or setup of the program<br>Skepticism about platform success<br>Varied perspectives on digital transformation (marketing vs. IT)<br>Widespread Acceptance but Implementation Challenges | |
| 5 | Monetisation of existing user base across systems<br>Opening new revenue channels<br>Real-Time Reporting Enhancements and Monetisation Opportunities<br>Targeting growth in customer base<br>Underperformance in revenue expectations | 1st Order Category: Revenue Generation |
| 27 | Assessing Skill Availability for Technology Support<br>Central Role of Training and User Interface<br>Challenges in acquiring the right skills<br>Concern for foundational learning<br>Consolidated development team for a single product outcome<br>Critical knowledge not systematically documented<br>Developer frustration with outdated technologies drives self-learning<br>Disparities in Digital Skills Among Executives<br>Employee Training and Skill Development<br>Enhanced knowledge sharing and collaboration<br>External resources and self-learning drive technology choices<br>High review effort for junior code<br>Importance of Training and Skill Development<br>Incorporation of external training tools for upskilling.<br>Increased partnerships and training initiatives due to skill gaps.<br>IT Professionals as Process Change Specialists<br>Lack of relevant skills within the organization<br>Leadership in DevOps and Cloud<br>Mindfull strategic approach<br>Necessity of upskilling in AI for marketing roles<br>Need for skills immersion for workforce development | 1st Order Category: Skills and Capabilities |

| | | |
|---|---|---|
| | Restriction of AI tools for junior developers<br>Risk of overwhelming senior developers<br>Sales team adaptation to technical conversations<br>Setting up of diverse training initiatives<br>Shift to more skilled roles due to technology<br>Technology choices aid in talent recruitment and retention | |
| 9 | Challenges with Physical Address Disparity in Service Provision<br>Consumers innovating faster than companies<br>Dehumanisation of customer relationships in digital environments<br>Environmental and Political Considerations in Service Adoption<br>ESG and Corporate Citizenship<br>Need for societal and environmental realignment<br>Pandemic-Driven Acceleration of Digital Literacy<br>Potential societal and environmental impact of digital transformation<br>Risks of Uncontrolled AI Deployment | 1st Order Category: Societal and Environmental Factors |

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| 22 | AI-Enabled Customer Service Scalability<br>Automation of Routine Tasks for Self-Service Reporting<br>Cloud tools enabling scalability and performance<br>Daily Customer Experience with Digital Technology<br>Data-Driven Process Automation<br>Enhancing digital and hybrid customer experience through technology<br>Flexibility in naming conventions<br>Heavy reliance on cloud technologies<br>Large-Scale Implementation of Data-Driven Services<br>Managing customer priorities<br>Omni-Channel Accessibility Across Devices<br>Organisational data assets<br>Preference for data control in cloud vs. on-premises<br>Recent Successes in AI, Automation, and Digitalisation<br>Skills and Integration need to drive Data Consistency<br>Standardised naming for features<br>Technology as an Enabler<br>Technology driving reliable software development<br>Technology-Driven Service Efficiency<br>Transition to Data-Driven Decision-Making with AI<br>Using top AI development tools<br>Utilising Existing Network Infrastructure | 1st Order Category: Technology and Data Utilisation |
| 20 | Accessing Production Information via Mobile Applications<br>Automation and Digital Tools Focus<br>Consumerisation of Technology<br>Diverse Digitalisation Projects<br>Early Exposure to Digitalisation<br>Evolution from Specialist to General Digital Skills<br>Experience in service provider roles, not as a technology consumer<br>Extensive Experience in Technology Sector<br>Focus on full-stack and ITSM solutions deployment<br>Importance of user and customer experience in technology design<br>Macro level, corporate level, segment level, and innovation side<br>Omni-Channel Customer Engagement<br>Omni-Channel Engagement for Seamless Customer Interaction | 1st Order Category: Technology Experience |

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| | Regular use of AI for development<br>Specialisation in emerging technologies<br>Technology promoter and ambassador within organizations<br>Unexpected AI solutions<br>usiness Transformation through Platform Acquisition<br>Vast experience with digital transformation<br>Vast experience with digital transformation: Career predominantly focused on digital transformation | |
| 27 | Advanced DevOps implementation compared to industry<br>Challenges of managing microservices architecture<br>Complex implementation of improved solutions<br>Developing IoT-Based Quality Control and SPC Capabilities<br>Difficulty in innovating new collection methods<br>Doubts on Implementation Choices<br>Ease of Transactions Across Platforms Using Single ID<br>Inconsistent orchestration of digital technologies<br>Infrastructure Enabling Digital Service Offerings<br>Integrating ERP with Real-Time Production Data for Optimisation<br>Integrating Legacy Systems into Unified Platforms<br>Internal Challenges in Achieving Convergence<br>IT Infrastructure Flexibility<br>Lack of integration across business areas<br>Lack of Interconnection Across Digital Platforms<br>Layering new systems over legacy structures<br>Leveraging and Integrating Existing Technical Infrastructure<br>Leveraging cloud and third-party solutions<br>Multiple product variations for customization<br>Necessity of continuous upgrades for software<br>OEM Resistance to External Integration with Proprietary Software<br>Shift toward open architecture | 1st Order Category: Technology Integration Challenges |

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| | Successful technology service delivery in supportive environment<br>Technologies implemented in isolation<br>Unified interface across channels<br>Unique Challenges of Technology Projects<br>Use of diverse cloud technologies | |
| 8 | Anticipated Benefits of Digital Adoption<br>Change tech stack to inform a different customer experience<br>Feature development benefits all clients<br>Increased Success Rate in Efficiency and Customer Experience Projects<br>Innovation for Business and Customer Outcomes<br>Optimism about potential with new technology<br>Simplified view of digital technology outcomes<br>Uncertainty about product lifecycle and potential | 1st Order Category: Technology Outcomes |

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| 17 | AI replacing roles in creative industries<br>Challenges in transitioning business models<br>Difficulty transitioning to platform business model<br>Digital Transformation Initiatives<br>Experience with digital transformation in manufacturing and managed services<br>Failed transformation due to ineffective legacy system replacement<br>Focus on face-to-face sales limiting digital proposition development<br>Importance of transforming legacy businesses to become technology-led<br>Lack of documentation and standards in legacy organisations<br>Legacy Business Adapting to Digital Footprint<br>Legacy systems put together with sticky tape<br>Shift from Hardwired to Digital Platforms<br>Shift from Manual Tasks to Strategic Roles Due to Digital Assistants<br>Thriving Traditional Organisations through Digital Transformation<br>Transition from telco to tech solutions<br>Transition without added value<br>Unaddressed business process transformation | 1st Order Category: Transformation of Legacy Businesses |
| 9 | Alignment of Organisation with Technology Trends<br>Clear digital vision shared internally and with customers<br>Comparison of controllability between internal and external threats<br>Complexity arises when diving deeper<br>Digital Technology Impact Across Industries<br>Interconnectedness of External Factors in Shaping Customer Priorities<br>Problem in the wording of digital technology<br>Technology Advancement Leading to Trust<br>Uncertainty About Advanced Digital Concepts like Digital Twins | 1st Order Category: Understanding digital technology |

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| 37 | Adoption of AI for development<br>Agile Strategic change<br>AI integration enabling technological leapfrogging<br>Business process re-engineering for enterprises<br>Changing stance on server investment<br>Cloud-agnostic DevOps tool usage<br>Correct approach to Agile experimentation and learning.<br>Digital technology enables scaling of service offerings<br>Eagerness to use AI for clients<br>Early adoption of bleeding-edge technologies validated over time<br>Evolution of Technology from Operational Tool to Customer Engagement Enabler<br>Expanding Technology Utilisation Across Segments<br>Failure to address strategic elements in omni-channel<br>Focus on modern products<br>Focus on Specific Technology Projects Over ERP<br>Identifying opportunities and challenges collaboratively<br>Infrastructure as Enabler for Digital Service<br>Instantaneous Access to Business Insights<br>Introduction of opti-channel concept<br>Key Motivations for Digital Technology Adoption<br>Move towards platform agnosticism in cloud platforms<br>Organisational Technology Availibility<br>Platform concept for integrating market place<br>Potential for Single ID to Replace Passwords<br>Rapid improvement in AI capabilities<br>Re-evaluation of cloud as the sole future<br>Real product use only understood after consumer adoption<br>Shift to Standard Off-the-Shelf Solutions<br>Strategic Deployment of Technology<br>Strategic Implementation of Digital Technologies<br>Technology as a Strategic Advantage for External Benefits<br>Theory of technology for efficiency is the strategic ambition<br>Transition to a single, complex product<br>Use of GSM Network for Virtual Title Deed Creation<br>Using technology for business operations sounds good in theory<br>Vision for Autonomous Machine Adjustments | 1st Order Category: Strategic Use of Technology |

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| | Worked in organizations aiming to improve efficiency and effectiveness | |
| 8 | Acknowledgement of past mistakes<br>Automating inefficiencies without reimagining business processes<br>Complexity between theory and practice<br>Digital initiatives not delivering ROI<br>Few cases meeting expectations<br>Gap Between External Hype and Internal Implementation<br>Perceived Gap Between Digital Aspirations and Reality<br>Theory to Practice Adoption in Organisations | 1st Order Category: Gap Between Theory and Practice |
| 2 | Difficulty in technology choice<br>Uncertainty About Project Viability | 1st Order Category: Difficulty in technology choice |

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| 15 | Alignment of Organisation with Technology Trends<br>Business silos causes misalignment<br>Business strategy over IT project<br>Challenges with Uniform Digital Solutions Across Sites<br>Difficulty in technology choice<br>Expensive lift-and-shift approach without process reengineering<br>Fragmented functions between IT and business<br>IT and business have different perspectives<br>Limited opportunity to showcase digital solutions<br>Rare perfect understanding between IT and business<br>Silos and lack of process clarity<br>Strongest voice in the room<br>Technology decisions abdicated to IT<br>Transformation efforts without foundational readiness lead to inefficiencies<br>Unexploited network effects of the platform | 1st Order Category: IT-Business Disconnection |
| 4 | Bias in technology choices<br>Conservative technology choices<br>Exploratory technology choices<br>Extreme technology choices | 1st Order Category: Technology Selection Bias |
| 5 | Agile approach with tangible, measurable outcomes<br>Importance of measurable outcomes for accountability<br>Lack of digital metrics<br>Misaligned metrics<br>Over-reliance on traditional P&L metrics | 1st Order Category: Metrics Challenges |
| 3 | Lack of Employee Involvement in System Deployment<br>Miscommunication Between IT and Business<br>Need for open dialogue and unsolicited discussions | 1st Order Category: IT-Business Communication Barriers |
| 6 | "Efficiency usually comes first, followed by customer experience."<br>Effectiveness leads to growth<br>Efficiency reduces cost<br>Efficiency versus effectiveness confusion<br>Operational Focus Limits Technological Innovation<br>Technology Complexity | 1st Order Category: Efficiency vs. Effectiveness |

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| 18 | Balancing Multiple Stakeholders in Strategic Planning<br>Balancing Needs of Different User Groups<br>Balancing shareholder expectations with job creation<br>Balancing shareholder returns and employee concerns<br>Balancing technology with empathy for quality service<br>Coherent Strategy for Internal-External Alignment<br>Communication skills<br>Complete misalignment<br>Conflicting perspectives<br>Consumer-Oriented Expectations vs. Practical Applications<br>Ensuring Contractual Alignment with Partners<br>Impact of digitalisation on relationship-driven industries<br>Inconsistent OEM Cooperation and Information Sharing<br>Misalignment between business and finance<br>Misalignment Between Business Decisions and Internal Solutions<br>Misalignment between government expectations and industry evolution<br>Perceived Gap Between Digital Aspirations and Reality<br>Shareholder influence on digitalisation | 1st Order Category: Stakeholder Misalignment |
| 21 | Acceleration of change through AI<br>AI Transforming Business Operations and Consumer Interactions<br>AI's slower adoption in technical fields<br>Caution against overwhelming customers with technology<br>Emergence of omni-channel strategy<br>Established Digital Infrastructure as a Baseline<br>External Investment Influences Technology Adoption Cycle<br>First-Follower Adoption Strategy in Risky Industries<br>Growing Organizational Interest in IoT Adoption<br>High Demand for Emerging Technologies Despite Limitations<br>Impact of Emerging Technologies on Market Dynamics<br>Impact of infrastructure and price<br>Influence of media and market trends on executive decision-making in digital transformation<br>Initial Poor Performance of Early AI Solutions<br>Low Internal Adoption Despite Technological Investments<br>Misjudgment of AI potential in creative fields<br>On-premises vs. cloud preference shift | 1st Order Category: Technology Adoption Trends |

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| | Positive Cycle of Technology Adoption and Advancement<br>Rate of technological change<br>Smartphone adoption trends<br>Trend of cloud repatriation | |
| 12 | Agile's impact on digital transformation and cross-functional collaboration<br>Breaking Down Silos for Internal-External Collaboration<br>Cross-Functional allignment need<br>Cross-Functional Gaps as Cost Drivers<br>Disparate channel management<br>Effective Collaboration for Business Outcomes<br>Functional Structure Limitations<br>Independent Digital Initiatives at Local Sites<br>Joint ventures between consumers and telecom companies<br>Multilayered leadership challenges in managing digital transformation<br>Transition from Siloed Operations to Cross-Functional Collaboration<br>Vertical silos and lack of channel integration | 1st Order Category: Cross-Functional Challenges |
| 6 | Board accountability<br>Board accountability in technology decisions<br>Board digital literacy<br>Board Knowledge sharing and education<br>Provider Responsibility in AI Management<br>Unclear ownership and complex decommissioning | 1st Order Category: Accountability in Digital Governance |
| 4 | Increased customer scrutiny and pre-engagement assessments<br>Role of Guiding Principles in Decision-Making | 1st Order Category: Governance and Upskilling |

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| | Technical Expertise Translation Needed<br>Upskilling for Effective Governance | |
| 4 | Difficulty understanding complex systemic relationships<br>Generational linear thinking<br>Poor understanding of systemic consequences<br>Scarcity of Systemic Thinking Skills | 1st Order Category: Scarcity of Systemic Thinking |
| 4 | Difficulty in Identifying Systemic Relationships<br>Generational linear thinking<br>Narrow focus on core function inhibits challenging and reimagining processes<br>Unnoticed systemic issues | 1st Order Category: Traditional vs. Systemic Thinking |
| 2 | Identifying meaningful vs. peripheral connections<br>Unnoticed systemic issues | 1st Order Category: Identifying Key Systemic Connections |
| 3 | Blending of diverse elements for broader view<br>Identifying meaningful vs. peripheral connections<br>Misleading fascination with indirect connections | 1st Order Category: Integrative and Broader Perspective |
| 5 | Economic imperative to achieve exponential growth with minimal cost increase<br>External economic and labour factors in digital transformation<br>External opportunities in call centre industry due to affordable labour and English proficiency<br>Importance of supply and demand in adoption<br>Role of human behavior, technology, and economics | 1st Order Category: Economics as a Driver |

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| 23 | AI Adoption Driven by Internal Business Needs<br>Desperate measures during decline<br>Documentation gaps and resistance as transformation barriers<br>Escalating extinction curve due to inward focus<br>Exhaustion from keeping up with rapid technological changes<br>Extended Internal Transformation Process<br>Focus on internal impact of digital service adoption<br>Internal factors as controllable<br>Internal Factors for Digital Adoption<br>Internal factors like human adaptation are harder to control<br>Internal focus on cost reduction<br>Internal implications of procuring digital services<br>Internal resistance and misunderstanding of platform business model<br>Need for Internal Restructuring and External Value Addition<br>Need to overcome resistance to change<br>Organisation's speed depends on managing internal and external factors<br>Overlooking challenges and obstacles in digital transformation success stories<br>People as the core challenge in digital transformation<br>Project Deprioritisation Due to Resource Limitations<br>Resistance to change as a barrier to transformation<br>Security and people-related threats lead to similar challenges<br>Siloed thinking limits adoption of new ways of working<br>Skill Requirements as Internal Barriers | 1st Order Category: Internal Focus Challenges |
| 10 | Complexity in Partner Contracting and Onboarding<br>Disconnect between tech choices and business goals<br>Doubts on Implementation Choices<br>Expensive mistakes due to strategic misalignment<br>Loss of focus and competence in digital transformation efforts<br>Loss of value proposition leading to decline<br>Misalignment between customer needs and service offering<br>Roadmap becomes quite mammoth and budget gets blown<br>Technology decisions based on industry sentinment | 1st Order Category: Strategic Misalignment and Consequences |

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| | Uncertainty over the value of platform-based digitisation | |
| 16 | Agile and Iterative Approach for Continuous Improvement<br>Anticipation of Learning and Insights<br>Continuous Adaptation to Changing External Environment<br>Continuous learning and skill development in the workplace<br>Cumulative Impact of Incremental Changes<br>Evolving role of call centre agents towards complex tasks<br>Focus on imagination, engineering, and integration<br>Learning from failures<br>Learning from past experiences<br>Lessons Learned in Third-Party Engagement<br>Leveraging Data to Optimize Machine Performance<br>New ways of working driving a shift in skills and learning<br>Potential Reassessment of Energy Management Initiatives<br>Prioritising market delivery over build-from-scratch approach.<br>Reflection on Past Digital Projects<br>Use of external learning platforms like Udemy for skill development. | 1st Order Category: Learning and Adaptation |
| 13 | Bridging business and tech for digital transformation success<br>Business and IT partnership in identifying and understanding challenges and outcomes<br>Difficulty in translating tech knowledge into business value<br>Effective communication and integration<br>Embedding service providers within client organisation<br>Importance of joint business and IT ownership in transformation<br>Integration of value chain and rapid adaptation<br>Internal and external collaboration in service delivery<br>Internal Collaboration for Enhanced Customer and Business Outcomes<br>Internal-External Team Integration for Business Effectiveness | 1st Order Category: IT and Business Integration |

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| | IT and business integration<br>Need for business and tech to align more closely<br>Strategic ERP System Rollout Planning | |
| 11 | Agile Development to Mitigate Requirement Capture Delays<br>Delayed Stability and Testing Phase<br>Failed Large-Scale Digitalisation Projects<br>Inadequate documentation of product development rationale<br>Managing multiple versions was challenging<br>Misunderstanding and misuse of Agile methodologies<br>People lose faith in the process and ability to change<br>Prolonged project timelines causing waste<br>Reluctance to stop failing projects.<br>Slow start due to bureaucracy<br>Structured Project Management for Digital Initiatives | 1st Order Category: Project Management Challenges |
| 6 | Challenges in Sustaining Agile Projects Over Time<br>Costly project failure due to incomplete legacy system migration<br>Misunderstanding of technology and cost structures<br>Poor investment-to-return ratio<br>Sunk cost fallacy driving decisions<br>Throwing good money after bad | 1st Order Category: Financial Mismanagement |
| 10 | Balancing Flexibility with Business ROI<br>Complexity in Meeting Service Requirements<br>Driving Incremental Value<br>Identifying and Measuring Problem-Solving<br>Lack of accountability for outcome measurement<br>Lack of effective digital metrics<br>Measurable outcomes with agile foundation<br>Measuring Outcomes Over Milestones for AI Projects<br>Misguided belief that more reporting mechanisms increase productivity.<br>Preference for strict forecasting over adaptability | 1st Order Category: Metrics and Measurement Issues |

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| 11 | Competing with Insurtechs while dealing with bureaucratic systems<br>Complacency hindering digital transformation<br>Delayed Automation Due to Preference for Manual Labour<br>Fluctuating between service providers and permanent employees causing instability<br>Inertia and Agility Challenges in Large Organisations<br>Lack of agile mindset<br>Lack of Willingness to Innovate in Successful Companies<br>Necessity for Radical Change Due to Business Survival<br>Organisation in survival mode<br>Over-investment and inability to pivot<br>Scaling up complicates digital transformation | 1st Order Category: Organisational Inertia |
| 18 | Admiration for execution discipline<br>Aligning external pressures with internal digital transformation realities<br>Cautious product development approach<br>Clear business ownership essential for effective transformation<br>Clear objectives and controlled pipeline<br>Client-driven product development<br>Complexity and rework due to an overly broad technology stack<br>Coordinated Efforts for Measurable Outcomes<br>Crucial need to address external and internal concerns<br>Defining Success Criteria<br>Incremental Changes and Strategic Awareness for Large Organisations<br>Rapid decision-making to stop failing projects<br>Strategic focus with limited project scope.<br>Strategy Translation into Tactical Steps<br>Targeted Value Creation in Transformation<br>Targeting niche market<br>Technology implementation is key<br>Transitioning to a product-centered business | 1st Order Category: Strategic Focus and Execution |
| 5 | Demographic-Specific Customer Experience Priorities<br>Exceptional growth in financial services<br>Execution discipline linked to growth<br>Improved client acquisition through evolved operations | 1st Order Category: Growth and Market Leadership |

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| | Scalable Service Management Enabled by New Technologies | |
| 14 | Addressing customer pain points with technology<br>Alignment of consumer need and product development<br>Balancing customer needs with innovation<br>Client pressure for software upgrades<br>Customer Demand Influencing Business Transformation<br>Customer-centric approach in digital service delivery<br>Customer-first approach for digital solutions<br>Development Impacting Client Experience<br>Digital Tool for Estate Agents<br>Enabling Additional Services for Real Estate Agents<br>Expanding Customer Network and Value Chain Access<br>Importance of relationship-centric digital services<br>Integration of Technology and Customer Needs for Real Enablement<br>Understanding Client Engagement Drivers | 1st Order Category: Consumer-Centric Product Development |
| 17 | Blurred lines between external and internal factors<br>Building custom software to replace manual systems<br>Digital technology enhances service structure and predictability<br>Digital Transformation as a Continuous Journey<br>Digital transformation shifting nature of job roles<br>Digitalisation for Consumer Engagement and Monetisation<br>Digitisation as an inevitable trend with accelerated pace<br>Focus on Customer Engagement through Digital Technology<br>Fully digital rewards offering as a complete digital experience<br>High expectations but challenging execution of digitalisation.<br>Importance of managed services in digital transformation<br>Importance of platform relevance and understanding customer needs<br>Major digitisation shift from linear to platform model<br>Post-COVID Digital Self-Service Focus<br>Potential of digital service offerings to drive positive change | 1st Order Category: Digital Transformation Beyond Technology |

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| | Re-evaluating and streamlining analogue processes for digital service provisioning<br>Transition to digital bank through consumer education | |
| 1 | Impact of information abundance on Millennials | 1st Order Category: Impact of Information Abundance |
| 4 | New generational dynamics in digital era<br>New generations driving organisational change<br>Organisations resisting change will become redundant<br>Proactive adaptation to new generations | 1st Order Category: New Generational Dynamics |
| 1 | Outdated organisational structures | 1st Order Category: Outdated Organisational Structures |
| 12 | Business silos causes misalignment<br>Engaging users as active service participants<br>Fear and unclear process rationale as transformation obstacles<br>Internal Conviction for External Transformation Success<br>Leadership's Role in Gaining Buy-In for Successful Change<br>Necessity for business-led digital transformation.<br>Ongoing evolution in digital roles<br>Overcoming threats and resistance in digital transformation<br>Positive customer experience of digital products<br>Resistance due to personal fear and uncertainty<br>Story Telling and Positional Power<br>Trust as a key factor in transformation | 1st Order Category: Leadership Role in Digital Evolution |

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| 5 | Customer-Facing Product Development<br>Lack of validated market demand for new services<br>Prolonged Migration and Upgrade Process<br>Revamping legacy products as SaaS<br>Transition from legacy channels to digital platforms | 1st Order Category: Product Modernization |
| 12 | Digital Service Offering<br>Identifying and Resolving Gaps in Service Support Systems<br>Increasing Customer Demand for Enhanced Digital Experiences<br>Leveraging Captive Audience for New Opportunities<br>Pending Implementation of Referral System<br>Prioritizing front-end customer experience over back-end complexity<br>Pursuit of trends driven by external and internal pressures<br>Role of product managers in digital transformation<br>Supplier-driven push towards adopting "digital first" strategies<br>Technology scale and customer growth<br>Transition from customer-specific to standardized product development<br>Uncertainty about customer demand and service impact | 1st Order Category: Strategic Product Ownership |
| 14 | Automated Root Cause Analysis and Service Improvement<br>Automation Leading to Cost Reduction and Workforce Impact<br>Automation to Enhance Efficiency and Customer Experience<br>Continous improvement and assesment<br>Demand for streamlined, efficient processes that save time and reduce effort<br>Efficiency as a driver of unforeseen innovation<br>Environmental Factors Influencing Machine Performance<br>Exploration of Energy Reduction through Big Data<br>Impact of automation on traditional call centre roles<br>Implementation of unit testing to identify issues pre-release<br>Lack of Real-Time Feedback Loop in Production Planning<br>Need for Unified Production Monitoring System Across Multiple OEMs<br>Paperwork and manual labor driving change | 1st Order Category: Operational Efficiency and Automation |

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| | Real-Time Workflow Management for Improved Service Delivery | |
| 4 | Challenges in Remote Interviewing and Assessment<br>Historical Barriers to Technology Access<br>Limitations of quick-fix digital solutions<br>Need for Technology Overhaul | 1st Order Category: Technology Limitations and Challenges |
| 2 | Identifying Defect Sources with IoT Data<br>Software as a ledger of reality | 1st Order Category: Accurate Digital Representation of Reality |
| 12 | Aim for minimal or no downtime during upgrades<br>Balanced approach based on needs<br>Decreasing Importance of Routine Presentation Tasks<br>Digital technology ensures process consistency<br>Digital Transformation in Workforce Management<br>Implementation of IoT for Component Tracking and Analysis<br>Keeping up with front-end version updates requires significant effort<br>Leveraging Technology for Competitiveness and Operational Efficiency<br>Need for Real-Time Adjustment in Production Plans Based on System Feedback<br>Setting Automated Alerts for Scrap Rate Thresholds<br>Systems as control mechanisms<br>Use of Cooling Towers for Operational Efficiency | 1st Order Category: Technology for Operational Control |

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| 15 | Consumer Profiling Based on Usage Data<br>Creation of a comprehensive wiki for knowledge management<br>Data for strategic planning<br>Data Management as a Driver of Business Value<br>Data-driven decision making<br>Decision-Making Flexibility Enabled by Real-Time Data<br>Effective data usage is key for high-quality service<br>Effective Data Utilisation for Insights and Decisions<br>Increased Focus on Data Interpretation Over Preparation<br>Leveraging customer data for enhanced service delivery<br>Need for Data-Driven Decision Making with New ERP System<br>Providing relevant and timely information for decision making<br>Seasonal Optimization for Energy Efficiency<br>Using data and metadata for competitive advantage and service improvement<br>Using Data to Drive Continuous Improvement and Innovation | 1st Order Category: Data Utilisation and Strategic Decision-Making |
| 16 | Adapting business propositions to evolving customer needs.<br>Competition driving innovation<br>Competitive Market Pricing Strategy<br>Competitors leading in digital transformation<br>Doubts about the suitability of platform business models for all industries<br>Expectation of call centre industry growth due to language and geographic advantages<br>Exploring Growth Opportunities at High Market Share<br>Late response leads to irrelevance of changes<br>Market Availability and Pricing Impact<br>Market Saturation and Competitive Pressure<br>Market saturation limiting growth opportunities<br>Opportunities through Technological Innovation<br>Service development based on internal assumptions rather than customer demand<br>Tool Adoption for Relevance<br>Utilising third-party vendors for market expansion<br>Willingness to Pay Premium for Seamless Experience | 1st Order Category: Market Competition and Innovation |

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| 2 | Need for continuous reinvention and value reassessment<br>Price adjustment to remain relevevant | 1st Order Category: Price elasticity and market relevance |
| 2 | Technology being outstripped by something newer<br>Technology landscape making products outdated | 1st Order Category: Technology Obsolescence |
| 3 | Developer preference for modern technology<br>Employee Retention and Technology Relevance<br>Increased remuneration due to enhanced role value and expertise | 1st Order Category: Talent Retention and Technology Choice |
| 3 | Business Survival through Adaptation and Evolution<br>Necessity of constant evolution in technology<br>Need for Adaptability to Digital Technology | 1st Order Category: Survival Through Continuous Innovation |
| 21 | Automating without rethinking the underlying process<br>Developer dissatisfaction with outdated tools<br>Early Challenges in Video Conferencing Technology<br>External technology change impacting developer satisfaction<br>Failure to address technical debt<br>Frequent upgrades are challenging to manage<br>Gap between advanced AI capabilities and existing systems<br>Hybrid approach to cloud and on-premises<br>Implementation of Advanced ERP Features for Improved Tracking<br>Kubernetes enabling scalability and zero-downtime deployments<br>Leveraging network effects for platform business model<br>Limited Initial Integration Between Systems with Advanced Future Capabilities<br>Need for Converged Customer Experience<br>Progressive Nature of Digital Services<br>Rapid Advancement in AI Capabilities and Solutions<br>Retrospective Evaluation of Technology Choices<br>Scalability limitations due to legacy systems<br>Technological Advancements Fueling Innovation<br>Technology Maturity and Market Timing<br>Transformation from Technical to Digital Platforms<br>Vigilance in monitoring technology disruptions | 1st Order Category: Technology Evolution and Internal Impact |

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| 1 | Staff pushing for tech upgrades | 1st Order Category: Employee Advocacy for Technological Change |
| 4 | Adapting Technology into Business Practices<br>Business openness to tech suggestions<br>Transition from linear to platform-based business model<br>Use of hackathons and modern grad programs for recruitment | 1st Order Category: Organisational Flexibility in Tech Adoption |
| 4 | Adoption Driven by Competitive Pressure<br>Advantages of Smaller Organisations in Rapid Adaptation<br>Competitor influence on cloud adoption<br>Fear of losing market share driving digitalisation | 1st Order Category: Competitor Pressure and Technology Adoption |
| 4 | Expanding Platform Capabilities<br>External pressure for digital evolution<br>External pressures driving internal digitisation decisions<br>Transition from legacy Windows product to web-enabled version | 1st Order Category: Technology Transformation Driven by Market Pressure |
| 8 | Adapting Business Engagement to Technological Advances<br>And I think we're seeing what type of tech, so I think there's a lot to do in the channel tech<br>DevOps infrastructure investment for scalability and reliability<br>Evaluating Market Strategy for Competitiveness<br>Partnership with tech companies to accelerate innovation<br>Strategic Awareness and Technology Incorporation<br>Technology-Centric Organisational Focus<br>Transforming System into a Modular Platform | 1st Order Category: Strategic Technology Investment |
| 8 | Adaptation to Regional Digital Preferences<br>Challenges of Inflexible System Architecture<br>Development of Single ID for Digital Authentication<br>Digital Property Valuation through Data Inference<br>Importance of Modular and Adaptable Systems<br>Modular approach to tailor-made software<br>Multilayered leadership challenges in managing digital transformation<br>Simplification of Digital Service Delivery | 1st Order Category: Technology innovativion and modularity design |

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| 5 | Downtime primarily due to infrastructure upgrades<br>Flexibility in cloud provider choice<br>Rapid Capacity Scaling for Event Demands<br>Simplicity and Flexibility in Service Delivery<br>Transition from Windows to Linux for cloud apps | 1st Order Category: Technology Flexibility and Adapting |
| 2 | Focus on developers for product enhancements<br>Need to question and reimagine existing processes | 1st Order Category: Internal Developer-Centric Product Evolution |
| 7 | Concerns over data use and impact on existing relationships<br>Cybersecurity as a significant external factor<br>Increased cyber threats with digitalisation<br>Integration of Facial Recognition with Unique ID Number<br>Security as a driver for continuous updates<br>Security of Digital Transactions and Business Outcomes<br>Technical assurance and confidence in customer interactions | 1st Order Category: Technology and Cyber Security |
| 9 | Development of practical tutorials to aid learning.<br>Documenting upgrade processes for knowledge sharing<br>Evolving role of people due to AI automation<br>Incomplete Platform Development During Migration<br>Incorporating Learnings into New Projects<br>Lack of reskilling and understanding of business operations hindered digital transformation<br>Managing workforce concerns and reskilling needs<br>People's inability to adapt as quickly as technology<br>Transition from lecture-based to practical training approach. | 1st Order Category: Continous Learning and Adaption |
| 7 | Awareness of Emerging Digital Technologies Through Pilot Projects<br>Cross-industry digital technology deployment experience<br>Daily Interaction with Digital Services<br>Early digital transformation experience with SAP deployments<br>Ensuring Robust Technology for Service Delivery<br>Leveraging Technology Despite Challenges<br>Overseeing digital service provisioning across diverse industries | 1st Order Category: Technology and Industry Experience |

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| 13 | Customer experience as a primary measure of service success<br>Desired outcomes of transitioning from legacy processes<br>Digital Compliance and Risk Profiling<br>Digitisation Reducing Operational Costs<br>Enhanced Customer Experience Reducing Churn<br>Flexible Talent Management through Digital Solutions<br>Importance of Reliable Network Access<br>Industry-Specific Strategic Differentiation<br>Integrated Engagement Model for Competitive Differentiation<br>Service Management and Performance Challenges for Providers<br>Technology as an enabler, not the core focus<br>Variability in Machine and Mold Performance<br>Vision for Autonomous Machine Maintenance and Repair | 1st Order Category: Technology and Service Success Metrics |
| 21 | Alignment of People, Processes, and Technology for Meaningful Service Delivery<br>Concern on People, process and technology deployment<br>Digitising inefficient processes without questioning them<br>Disconnect Between Market Offerings and Internal Capabilities<br>Ensuring Process Efficiency Over Technical Complexity<br>Human adaptation is crucial for digital transformation<br>Importance of Involvement and Understanding in Change Management<br>Internal Transformation of Tools and Policies Critical for Success<br>Lack of alignment between new system and unchanged business processes<br>Lack of end-to-end process understanding prevents belief in transformation potential<br>Lack of foundational capabilities limits system effectiveness<br>Lack of improved customer and organisational efficiencies<br>Necessity of Preparedness in Digital Service Provision<br>People-Centric Approach to Digital Transformation<br>Poor documentation complicating updates<br>Re-examining and simplifying processes through collaboration | 1st Order Category: People, Process and Technology alignment |

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| | Risk of automating inefficiencies instead of transforming them<br>Role of people in understanding digital transformation goals<br>Success dependent on addressing root causes before technology implementation<br>Technology enablement for services creation<br>Unanticipated Process Complexity | |
| 6 | Challenges in conveying the digital transformation vision<br>Employee fears about future roles and skills<br>Importance of considering people in digitalisation<br>Job displacement due to chatbot implementation<br>Job security concerns during digital transformation<br>Resistance to change heightened by job insecurity | 1st Order Category: Digitisation and impact on job security |
| 1 | Economic impacts and political influence | 1st Order Category: Political Impact and Business Digital Transformation |
| 15 | Consumer Demand for Internet Services Drives Internal Investment<br>Consumer Technology Influences Internal Adoption<br>Economic Impact on Service Accessibility<br>External Complexity and Unexpected Challenges<br>External factors as uncontrollable and unpredictable<br>External Technology Advancements Prompting Internal Transformation<br>Geographical Constraints on Service Delivery<br>Increased Global AI Interest Simplifies Internal Funding Approval<br>Influence of Cost and Availability on Digital Adoption<br>Influence of Macroeconomic Conditions<br>Mainstream AI Tools Increase Internal Demand for Adoption | 1st Order Category: External Factors due to Digitalisation |

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| | Missed opportunities in informal market technologies<br>Openness of Certain OEMs to External Data Access<br>Technology Adoption Regulated Externally<br>Unpredictability of external factors in digitalisation | |
| 10 | AI replacing traditional roles in large call centres<br>Constraints due to security measures<br>Contextual Understanding of Client Interaction<br>Impact of Technology on Communication and Interaction<br>Integration of Social Impact with Business Outcomes<br>Market Trend Towards Personalisation and Phygital Integration<br>Rise of zero trust model<br>Technology Consumerisation and Accessibility<br>Technology Enhancing Daily Operations<br>Technology Supporting Personal Growth and Development | 1st Order Category: Technology and Societal Impact |
| 17 | Change Adoption for Internal and External Stakeholders<br>Change management challenges in digital adoption<br>Effective Management of Internal and External Changes<br>Factors influencing transformation pace<br>Gradual Digital Transformation Approach<br>Managing change is key, regardless of internal or external factors<br>Managing the gap between controllable and uncontrollable factors<br>Multi-Layered Drivers of Organisational Change<br>Multifaceted training programs addressing both tech and operational skills.<br>Navigating Complexities of Organisational Change<br>Necessity of Change Management in Technology Adoption<br>Need for managing people during digital service deployment<br>Organisation-Wide Engagement in Change<br>Proofs of Concept Stagnate Without End-User Adoption | 1st Order Category: Change Management |

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| | Service-focused attitude wins stakeholder support<br>Transition from reactive to proactive service as a people challenge<br>Uncertainty and risks associated with large-scale change | |
| 20 | Agile startups adapt easily but have limited impact<br>Agile technology deployment and learning approach<br>Agile vs. Waterfall Approach<br>Collaborative, agile, tribe-based approach to transformation<br>Continuous Innovation through Accessible Technology<br>Effective Use of Agile Methodologies for Digitalisation<br>Importance of Adaptability to Internal and External Changes<br>Importance of Small Increments and Real-Time Feedback<br>Incremental steps as a strategy for managing change<br>Incremental steps with clear measurable outcomes<br>Ineffective use of MVP approach<br>Innovation and Risk-Taking in Exploratory Phases<br>Iterative Approach and MVP Model for Market Entry<br>Iterative Development Impacting Client Experience<br>Need for Adaptation in a Fast-Paced Environment<br>Outcome-Based Approach and Regular Adjustments in Agile<br>Overcoming Delays with Flexible MVP Acceptance<br>Shifting from reactive to proactive service<br>spiration to adopt fail-fast, fail-forward mentality<br>Transformation Challenges Across Industries | 1st Order Category: Agility and Innovation |
| 5 | Pilot Approach for Data Collection on Environmental Impact<br>Struggling with effective change implementation<br>True Enablers Beyond Basic Communication Technology<br>Value creation through technology | 1st Order Category: Effective Technology Execution Impact |

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| | Value-Driven Digital Transformation | |
| 7 | Challenges in Rapid Adaptation for Large Organisations<br>Flexible procurement process for incremental changes<br>Governance and Allignment delaying innovation<br>Inflexible procurement hindering innovation<br>Internal procurement as a barrier to transformation<br>Limitations of Waterfall Approach<br>Stringent procurement cycles due to declining trust | 1st Order Category: Rigid process and structures delays progress |
| 7 | Aligning Internal and External Factors for Demand Management<br>Balancing Internal and External Influences in Product Delivery<br>Balancing Internal Investments with Customer Satisfaction<br>Combination of Factors Influencing Digital Transformation<br>Gap between external expectations and industry realities<br>Interconnectedness of internal and external business factors<br>Internal drivers for digital transformation change | 1st Order Category: Internal and External Factors Challenges |
| 3 | External demand for value at minimal cost<br>Lack of Value Realisation After Prolonged Investment<br>Leveraging customer base for additional value extraction | 1st Order Category: Value Creation Cost Effectiveness |
| 6 | Blurred Line Between Resistance to Change and Budget Constraints<br>Business-driven transformation with active role in delivery and process<br>Busness drivers for customer engagement<br>Interdependence of Infrastructure and Digital Outcomes<br>Involvement of commercial teams in solution development.<br>Tribe model with joint ownership between commercial and technology teams | 1st Order Category: Business Ownership and Engagement |
| 3 | Automatic Prevention and Self Correction<br>Measuring Outcomes Over Milestones for AI Projects<br>Service enhancement without addressing foundational issues | 1st Order Category: Technology Driven Complexity |
| 1 | Traditional and Non-Traditional Business Outcomes | 1st Order Category: Broadening Scope |

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| 3 | Call for Responsible AI Deployment<br>Carbon Emissions Footprint<br>Increased Organisational Accessibility and Responsibility | 1st Order Category: Technology and Corporate Social Responsibility |
| 16 | Aligning Internal Initiatives with External Realities<br>Aligning Internal Operations with External Strategy<br>Ensuring New Products Interface with Existing Support Ecosystem<br>Impact of Internal Dynamics on Go-to-Market Strategy<br>Influence of Guidelines and Standards on Market Approach<br>Integrated Approach to Business Transformation<br>New tools as workbenches for solutions<br>Parallel Impact of Internal and External Factors on Market Strategy<br>Prioritisation of Strategic Benefits Over Cost Reduction<br>Recognition of explore versus exploit agenda for organisational growth<br>Simplifying the message for impact and clarity<br>Strategic pursuit of omni-channel experience<br>Strategic Roadmap for Organisational Alignment<br>Strategic Vision for Future Digital Offerings<br>Unified Goal of Business Transformation<br>Using Strategic Roadmaps to Mitigate Challenges | 1st Order Category: Strategic Alignment and Execution |
| 11 | Aligning Internal and External Factors for Demand Management<br>Challenges in Implementing Single ID System Due to Legislative Barriers<br>Holistic Decision-Making with External Impact Consideration<br>Introduction of Virtual Title Deed Legislation<br>Legislative Impact on AI Usage<br>Market and Regulatory Constraints Shaping Product Offerings<br>Need for AI Governance and Safety Measures<br>Regulatory Compliance Limiting Product Development<br>Regulatory Constraints Affecting Technology Decisions<br>Regulatory Constraints on Product Development<br>Stakeholder alignment enables technology reach | 1st Order Category: Regulatory and Compliance Challenges |

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| 5 | Adapting business propositions to evolving customer needs.<br>Impact of One ID on Digital Landscape<br>Improving Access to Services for Broader Social Impact<br>Technology as an Enabler for Lifestyle Choices<br>Widespread Use of Technology and User Challenges | 1st Order Category: Digital Inclusion and Accessibility |
| 1 | Pitfalls of Ambitious Digital Transformation | 1st Order Category: Risk of Over-Ambitious Transformation Projects |
| 5 | Adoption at Grassroots Level Determines AI Success<br>Employee Disengagement Due to Project Impact<br>End-User Adoption Key to Realising Benefits<br>High churn and recovery challenges during agile and transformation processes<br>Importance of Internal Buy-In for Transformation | 1st Order Category: Employee Engagement and Buy-In |
| 2 | Ineffective Knowledge Sharing Post-Project<br>Missed Opportunities in Knowledge Sharing | 1st Order Category: Knowledge Management Gaps |
| 2 | Embedding Learnings into Organisational Processes<br>Lack of sufficient learning from past mistakes in transformation efforts | 1st Order Category: Organisational Learning and Process Integration |
| 2 | Engagement with External Vendors for Energy Management Solutions<br>Tools for Capturing and Sharing Knowledge Across Silos | 1st Order Category: Technology for Knowledge Sharing |
| 1 | Underutilised Data Across Organisational Silos | 1st Order Category: Data Silos and Integration Challenges |
| 1 | Need to Harness Data for Organisational Capability Building | 1st Order Category: Building Organisational Data Capability |
| 1 | Overload due to sudden urgency after prolonged backlog | 1st Order Category: Established Mindset Against Innovation |

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| 6 | Awareness of the need for change but uncertain urgency<br>Failure of Digital Projects Due to Low End-User Adoption<br>Leadership Active Listening<br>Resistance to AI Adoption Due to Control Issues<br>Resistance to Change Due to Job Impact<br>Struggle to cope with the scale of change from Agile and digital transformation | 1st Order Category: Organisational Resistance to Technology |
| 4 | Consumer Adoption Drives Internal Interest in AI<br>Consumer Technology Penetration Influences Corporate Environment<br>Evaluation of Cost Models for Technology Adoption<br>Pandemic and Consumer Adoption Accelerate AI Integration | 1st Order Category: External Influences on Organisational Change |