

# Digital Transformation and Business Model Innovation: A Multiple Case Study of Retail Chains in Germany

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Dissertation submitted in partial fulfilment of requirements for the MSc in International Management, at Universidade Católica Portuguesa and for the MSc in International Management at Kozminski University, June 1<sup>st</sup>, 2023.

## **Abstract**

Title: Digital transformation and business model innovation: A multiple case study of retail chains in Germany

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Keywords: Digital Transformation, Retail Industry, Business Model Innovation, Facilitating Factors, Hinderling Factors

This thesis examines how the digital revolution has affected German grocery stores in particular and the country's retail sector as a whole. This study illuminates the connection between digital transformation and business model innovation in the retail industry using various qualitative research techniques, including expert interviews with Company A and Company B and a thorough literature analysis. The findings draw attention to the enabling elements, which include strong leadership commitment, successful change management, engagement with external partners, availability of resources and competencies, and a customer-centric emphasis. Legacy systems, talent shortages, poor IT infrastructure, and cultural barriers are a few of the reported difficulties. By evaluating these elements, the study offers valuable perceptions and suggestions for retail businesses seeking to negotiate the challenges and take advantage of the advantages of digital transformation and business model innovation. The study adds to the body of knowledge by providing actual data and case studies that deepen the comprehension of how business model innovation in the retail sector interacts with digital transformation. This thesis offers concrete solutions to improve operations and preserve competitiveness in the constantly changing consumer products industry. It is an invaluable resource for retail organizations looking to stimulate business model innovation and drive digital transformation.

## **Resumo**

**Título:** Digital transformation and business model innovation: A multiple case study of retail chains in Germany

**Autor:** Denis Zolinski

**Palavras-chave:** Transformação Digital, Sector Retalhista, Inovação do Modelo Empresarial, Factores Facilitadores, Factores Dificultadores

Esta tese analisa a forma como a revolução digital afectou as mercearias alemãs, em particular, e o sector retalhista do país como um todo. Este estudo ilustra a ligação entre a transformação digital e a inovação do modelo empresarial no sector do retalho, utilizando várias técnicas de investigação qualitativa, incluindo entrevistas a especialistas da Empresa A e da Empresa B e uma análise exaustiva da literatura. As conclusões chamam a atenção para os elementos facilitadores, que incluem um forte empenhamento da liderança, uma gestão da mudança bem sucedida, o envolvimento com parceiros externos, a disponibilidade de recursos e competências e uma ênfase centrada no cliente. Os sistemas herdados, a escassez de talentos, as deficientes infra-estruturas de TI e as barreiras culturais são algumas das dificuldades comunicadas. Ao avaliar estes elementos, o estudo oferece percepções e sugestões valiosas para as empresas de retalho que procuram enfrentar os desafios e tirar partido das vantagens da transformação digital e da inovação do modelo empresarial. O estudo contribui para o corpo de conhecimento ao fornecer dados reais e estudos de caso que aprofundam a compreensão de como a inovação do modelo de negócio no sector do retalho interage com a transformação digital. Esta tese oferece soluções concretas para melhorar as operações e preservar a competitividade na indústria de produtos de consumo em constante mudança. É um recurso inestimável para as organizações de retalho que procuram estimular a inovação do modelo empresarial e impulsionar a transformação digital.

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## **List of Abbreviations**

Artificial intelligence (AI)

Business Model Canvas (BMC)

Business to Consumers (B2C)

Digital Transformation (DT)

Direct-to-Consumer (D2C)

Distributed Ledger Technologies (DLT)

e.g. - for example (from the Latin *exempli gratia*)

et alia (et al.)

etc. - and the rest/other similar things (from the Latin *et cetera*)

Fast Moving Consumer Goods (FMCG)

Figure (Fig.)

General Electric (GE)

Information Technology (IT)

Internet of Things (IoT)

Key performance indicator (KPI)

National Aeronautics and Space Administration (NASA)

Pages (pp.)

Proctor and Gamble (P&G)

Radio-Frequency Identification (RFID)

RFID Network Planning (RNP)

Research & Development (R&D)

Return on Investment (ROI)

Sustainable Competitive Advantage (SCA)

Three-Dimensional (3D)

## **Acknowledgement**

Firstly, I would like to thank my thesis supervisor, Piotr Wójcik, for his support and guidance throughout this whole process. Without his insights and help along the way, this thesis would not have been possible. I would also like to thank my family for their love and endless support throughout my entire academic career. Thank you for encouraging and enabling me to pursue my dreams and extend my academic knowledge in such a great manner. And lastly, I would like to thank my friends, specifically Malin Louisa Marxen and Julia Franziska Adam for their unconditional support and help throughout this process.

## Introduction

In the quickly changing retail sector, two interrelated ideas that have grown essential are digital transformation and business model innovation. Due to the pervasive effects of digitization, retail chains, especially those in the grocery industry, are seeing substantial changes in customer behavior and market dynamics. To successfully adapt to these developments, retail chains in Germany must comprehend the causes, determinants, and impacts of digital transformation on business model innovation. With an emphasis on retail chains in Germany, this study's various case study methodology seeks to solve these issues.

**The research aims to understand the link between digital transformation and business model innovation in the German retail setting by looking at real-world examples and assessing the experiences of these retail chains.** The following research inquiries will guide the investigation:

- 1. What are the motives for conducting digital transformation by big grocery retailers?*
- 2. What are the internal and external determinants of the structure of business model innovation of big grocery retailers while undergoing digital transformation?*
- 3. What are the facilitating and hindering factors of digital transformation as conducted by big grocery retailers?*
- 4. What are the individual and organizational consequences of digital transformation driving business model innovation?*

This thesis investigates the factors influencing digital transformation and the business model innovation (BMI) process across German retail chains. It is critical to comprehend how these developments affect the business models of retail organizations as the retail industry experiences a dramatic digital transformation. To understand the forces driving transformation, the makeup of BMI, and the effects of these changes, this study focuses on the link between digital transformation and BMI in the retail business.

Several case study methodologies were used to answer the research issues. In addition to using direct observation, the research entailed interviewing managers from particular German retail chains. Secondary data was also gathered via studies on the industry, business presentations, and pertinent literature. The study's retail chains and interview subjects' identities were kept secret to guarantee anonymity and privacy.

Using these research techniques, the study intends to present a thorough knowledge of how the digital revolution affects BMI across German retail chains. The study adds to the body of knowledge on the interactions between digitization and BMI in the retail sector by examining the factors influencing and effects of digital transformation. To successfully navigate the difficulties and seize the opportunities presented by digital transformation, retail chains in Germany can use the study's findings to their advantage. This will allow them to adapt their business models effectively and maintain competitiveness in the rapidly changing retail environment.

Five chapters form this thesis, which focuses on how business model innovation and digital transformation interact in the retail sector. The review of digital transformation in Chapter 1 includes a discussion of its fundamental components, advantages, difficulties, and critical ingredients for its implementation. Business model innovation is the primary topic of Chapter 2, which also examines its ideas, barriers to success, and relationship to digital transformation. In particular, Chapter 3 looks at the retail sector's innovation in business models, digital transformation, and contemporary trends. The empirical findings from multi-case research involving German retail chains are presented in Chapter 4. The study findings are discussed in Chapter 5, along with the drivers of business model innovation and the enabling and impeding aspects of digital transformation. The thesis finishes with conclusions, restrictions, and suggestions for more study. The mentioned sources are included in the References section, and the interview process and coding table are in the Appendix. This thesis helps comprehend how the retail sector changes due to business model innovation and digital technology.

## **Chapter 1. Digital Transformation Phenomenon**

This master's thesis' first chapter explores the topic of digital transformation. It starts by outlining the fundamental components of digital transformation and giving a thorough explanation of it. The chapter examines several digital transformation models that companies may use as well as various strategies for starting and accelerating this transformation process. The chapter also covers the benefits and challenges that companies could experience when they embark on a digital transformation path. It also outlines crucial success elements for the execution of efforts for digital transformation. The chapter ends by introducing the idea of digital mastery and laying the groundwork for later chapters of the thesis to further explore and analyze this important topic.

### **1.1. Definition of Digital Transformation and its Core Elements**

The process of employing digital technology to fundamentally alter how firms function and provide value to their consumers has been called "digital transformation" in recent years. Vial (2019) claims that digital transformation entails integrating digital technology into every aspect of a company, leading to significant adjustments in how the firm functions and provides value to its clients. Changes to organizational structures, procedures, and business models may be part of this. On the other hand, digitalization utilizes digital technology to automate current business operations and increase efficiency without materially altering how the organization functions. Digitalization is a crucial initial stage in the digital transformation process, as noted by Warner and Wager (2019), but it is insufficient on its own. Organizations must instead put their efforts into developing dynamic skills that allow for constant strategic renewal and adaptability to the shifting digital context. As businesses use digital technology to create new sources of value for their stakeholders and consumers, this includes a continual testing, learning, and adaptation process. Overall, digital transformation fundamentally changes how businesses function and calls for a deliberate, long-term strategy beyond specific digitization initiatives.

The influence of digital transformation on the economy, society, and individuals has become an important issue in recent years due to the phenomenon's increasing prominence. The term "digital transformation" is not universally agreed upon. Still, it is generally understood to refer to a process that involves integrating digital technologies into various aspects of an organization's operations. It fundamentally changes business models, processes, and customer interactions. According to McAfee (2009), the velocity of change in a society driven by digital

technological progress involving various technologies at different degrees of maturity that will merge and produce new technologies is what is meant by digitalization. Tilson et al. (2010) also state that a sociotechnical process of adapting digitizing methods to larger social and institutional contexts render digital technology infrastructural. The conversation on the use of data in businesses in recent years has often been grouped under terms like "digitization," "digitalization," and "digital" (e.g., Weill & Woerner, 2018 & Ross, 2017). Most writers use the phrases synonymously, while others provide distinct but differing two concepts. Moreover, there is no clear definition of what the terms—"digital transformation," "digitalization," or "digitization"—mean or what they are intended to convey. (Demlehner and Laumer, 2019; Legner et al., 2017; Mertens and Wiener, 2018; Riedl et al., 2017).

In contrast to digitalization, which uses digital technology to alter a business model and offer new options for generating money and value, digitization is moving from analog to digital form, according to Gartner's IT Glossary. There are connections between digitization, digitalization, and digital transformation, but they should be conceptually kept apart. The term "digital transformation" was first used—or perhaps misused—to mean the same thing as "conventional concepts of digitalization." According to Bloomberg (2018), digitization is "the technological process of turning analog signals into a digital form" or "taking analog information and encoding it into zeroes and ones so that computers can store, analyze, and communicate such information" (Legner et al., 2017). The introduction of digital technology is believed to have substantially enhanced quality management, and there are still many chances for advancement in the future (Cots, 2018; Carvalho et al., 2020). Among the first instances are converting quality records into digital files and databases, moving to electronic work orders, and even creating and storing papers online (Cots, 2018). Most goods, services, and procedures can now be regulated across the value chain in an automated fashion. Aware of the core causes of production faults and working together to eliminate them, intelligent machines, smart factories, and workers equipped with augmented reality technology may prevent production and product failures (Sader et al., 2019; Kurdyukova et al., 2020; Lim, 2020). The availability and abundance of information, the speed, dependability, and reduced cost of technology all contributed to an advance in the caliber of both processes and goods (Radziwill, 2018). To get a better overview of the differences between digitization, digitalization, and digital transformation, the following table summarizes the different definitions.

**Table 1: Overview of Digital Definitions**

<b>Construct</b>	<b>Definition</b>	<b>Authors</b>
<b>Digitization</b>	“The increasing use of digital technologies for connecting people, systems, companies, products and services”	Coreynen et al. (2017)
<b>Digitization</b>	“The action or process of digitizing; the conversion of analogue data (esp. in later use images, video, and text) into digital form.”	Brennen and Kreiss (2016) based on Oxford English Dictionary
<b>Digitization</b>	“The material process of converting analog streams of information into digital bits.”	Brennen and Kreiss (2016)
<b>Digitization</b>	“Digitization involves standardizing business processes and is associated with cost cutting and operational excellence.”	Ross (2017)
<b>Digitalization</b>	“The adoption or increase in use of digital or computer technology by an organization, industry, country, etc.”	Brennen and Kreiss (2016) based on Oxford English Dictionary
<b>Digitalization</b>	“The way many domains of social life are restructured around digital communication and media infrastructures.”	Brennen and Kreiss (2016)
<b>Digital Transformation</b>	The use of digital technologies to radically improve the company’s performance.	Bekkhus (2016)
<b>Digital Transformation</b>	DT enables enterprises to improve operational efficiencies and organizational performance, and blend digital and physical business and customer experiences.	Al-Ruithe et al. (2018)
<b>Digital Transformation</b>	The continuously increasing interaction between digital technologies, business, and society, which has transformational effects and increases the change process’s velocity, scope, and impact.	Van Veldhoven & Vanthienen (2019)
<b>Digital Transformation</b>	DT involves integrating digitalized processes to achieve enterprise-wide automation, modernization, and previously unattainable outcomes.	NCMM (2020)

Source: own work

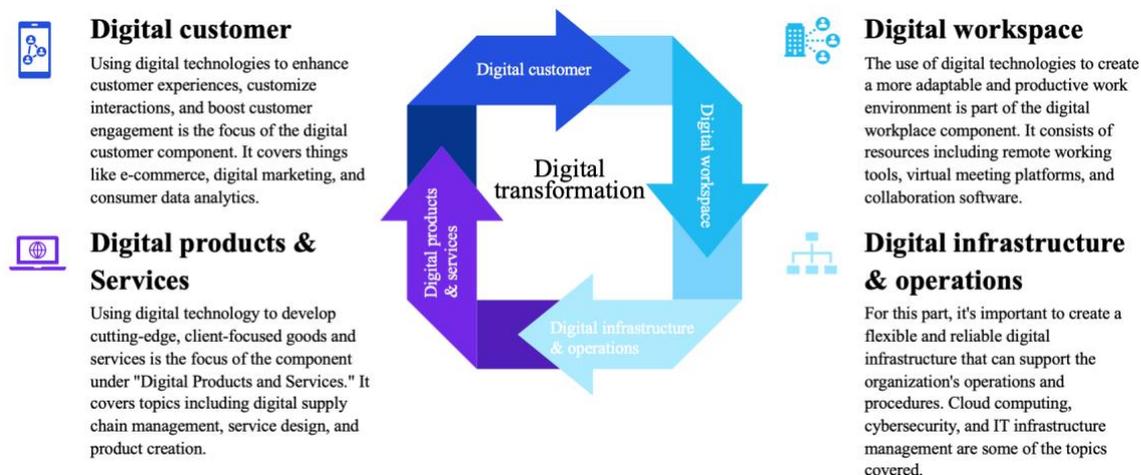
### **1.1.1. Forms of Digital Transformation**

Digitalization can improve manufacturing efficiency and reduce costs from the first perspective (Dalenogare et al., 2018). It may raise customer value, sales, and a company's revenue (Müller, 2019). Also, it has been demonstrated that digital technologies like sensors, cloud computing, big data, and many creative use cases significantly influence the transformation and success of manufacturing organizations (Brynjolfsson et al., 2014; Kang et al., 2016). The future of manufacturing may sound optimistic, but there are still many dangers and problems to be overcome. Adopting new digital technologies is becoming more complex (Frank et al., 2019). Only a few areas of digitization need to be improved, including stakeholder participation, necessary infrastructure or standards, organizational changes, and data management (Hofmann et al., 2017). Notably, digital innovation necessitates a shift in perspective for the entire business, including modifications of R&D processes, marketing, and manufacturing. Additionally, it impacts processes, products, and strategic choices (Yoo et al., 2010). While the majority of articles on digitalization, Industry 4.0, or smart manufacturing mainly concentrate on technology potentials (Bokrantz et al., 2017) and technical challenges (Thoben et al., 2017), they barely ever discuss the role of managers in facilitating this digitalization's transition (Demeter, 2017). Given the ongoing growth of digitization, businesses must change if they want to stay competitive (Siebel, 2019). Figure 1 presents current digital transformation research directions, facilitators, problems, and results.



technology and digital capabilities in these areas. Thus, it is essential to effectively go through digital transformation (McKinsey & Company, 2021).

**Figure 2: Four Components of Digital Transformation**



Source: Own work based on McKinsey & Company – Transformation with a capital T 2021

Even though various methods for guiding digital transformation have been researched and developed, including digitalization strategies (Matt et al., 2015 & Bharadwaj et al., 2013), the impact of business model transformation (Yoo et al., 2010 & Loebbecke et al., 2015), frameworks and roadmaps (Ghobakhloo, 2018 & Veile et al. 2019), implications for specific functions (Weill et al. 2013 & Horlacher et al. 2016), or transformation effects on an operational level (Henfridsson et al., 2014), only a small number of publications are focusing on managers' skills and behaviors to support this transformation (Neumeyer et al., 2021). In theory, the "micro-mechanisms of the change remain concealed" (Demeter et al., 2017), and there is no theoretical foundation. The industrial revolution transformed the contemporary industry into a dynamic one, forcing firms to reevaluate their traditional production processes in response to the demands of the global market. Effective factory management is essential in this area of concern as contemporary manufacturing demands and requires new manufacturing processes, techniques, and control (Kamble et al., 2018).

**The IoT (Internet of Things)** devices, known as radio frequency identifiers, have been used in modern manufacturing to enable manufacturers to monitor and identify the items or parts to obtain the necessary data. For readers to acquire data from the items, this technique requires that things be fitted with Radio-Frequency Identification (RFID) tags and use RFID antennas

in specific locations. The mathematical model's computation is based on factors including the network's coverage, transmission power, and the collision of these antennas. RFID Network Planning (RNP) optimization was developed due to the needed number of antennas for an RFID network (Kuo et al., 2013). According to Azizi (2017), the proposed hybrid artificial intelligence algorithm must be implemented in **three stages**:

1. Defining the working area where an RFID network should be established and optimized
2. Defining the proposed algorithm's parameters;
3. implementing the optimization algorithm to the defined RFID network.

These three phases allow us to assess the effectiveness of the proposed hybrid artificial intelligence algorithm for solving and optimizing nonlinear RNP problems.

**Artificial intelligence (AI)** is a cognitive science with active research programs in various fields, including robotics, machine learning, image processing, and natural language processing. Historically, machine learning and artificial intelligence (AI) have been seen as black-art approaches. There is sometimes a dearth of compelling data to persuade the industry that these techniques will operate repeatedly and consistently with a return on investment (ROI). At the same time, a developer's tastes and experience significantly impact the performance of machine learning algorithms (Ertel, 2018).

**Automation led by AI** has yet to have a quantitatively significant influence on product development, and today's sectors are dealing with new demands from the market and stiff competition. They require the drastic transformation known as Industry 4.0. Industry operations will be more flexible and effective by integrating AI with developing technologies, including the Industrial Internet of Things (IoT), Big Data Analytics, Cloud Computing, and Cyber-Physical Systems. Since Industrial AI is still in its infancy, a framework for its adoption in the industry must explicitly identify its structure, methodology, and problems. An industrial AI ecosystem that provides a framework for improved comprehension and application and encompasses the key components in this field (Lee et al., 2018).

### **1.1.2. Different Approaches to digital transformation**

The phrase "digital transformation" refers to business activities that employ the new capabilities provided by digital technology to change organizational strategy and operations. Nevertheless, despite more than fifty years of research and practice, such programs are notoriously challenging to execute successfully. According to earlier surveys, more than 70% of digital

transformation initiatives fail (Reeves et al., 2018). Digital technology has supported strategic and operational improvements across several sectors worldwide since the late 1950s. Mainframe computers considerably improved the capacity of an organization to concentrate control. Organizations could concentrate on management while decentralizing duties and related operations thanks to mini and personal computers and client-server architecture. Emergence of new business models and organizational structures emerged through the internet, mobile communications, smartphones, and the cloud, upending sectors as diverse as retail, travel, financial services, and entertainment. Emerging digital technologies, including autonomous vehicles and three-dimensional (3D) printing, as well as 5G, the Internet of Things (IoT), big data, artificial intelligence (AI), distributed ledger technologies (DLT), and multi-cloud environments, are creating new opportunities to transform strategy and operations in ways we could not have even imagined a few years ago (Dubey et al., 2019). Regrettably, we have a remarkable track record of failing to lead digital change (Ross et al., 2019). High-profile failures, such as those at General Electric (GE), Ford, and Proctor and Gamble (P&G), have brought attention to the key causes: a lack of strategic communications or the inability to identify a clear roadmap to plan and execute the correct measures. In the unpredictable digital market, it is difficult to specify the path and goal of digital transformation. Thus, addressing these challenges does not ensure success (Siebel, 2019). Though many unknowns and significant dangers exist, corporate leaders must move promptly. Their business could never recover if they wait until a severe catastrophe (Li, 2018a; Saldanha, 2019).

### **Transition management: Three strategies**

Many top corporate executives are tempted to make one big bet (a large-scale, radical digital transformation) and anticipate the best due to the complexity and high risks involved (Sebastian et al., 2017; McGrath & McManus, 2020).

#### ***Innovating by experimenting***

Innovating via experimentation is a well-liked strategy that enables companies to test many novel concepts on a budget (Li, 2018a). They can be assessed using new intelligence from internal and external sources. According to a senior executive at Alibaba, "if an idea works, scale it up quickly; if not, go on to new ideas, and you have not lost anything." This strategy allows corporate executives to experiment and learn, which is far more efficient than conventional linear strategies. It was crucial to the success of Alibaba, Amazon, Google, and Didi Chuxing (Li, 2018b).

### ***Radical transformation through incremental approaches***

The digital economy differs from the industrial economy and the service economy fundamentally in many ways. The mismatch between existing business models and the digital future is frequently too enormous to bridge in many businesses since the game's rules (economics) and significant market participation are changing. However, a drastic change can be prepared for and carried out only promptly. Instead, by taking several little actions, profound improvements can be made (Hopp et al., 2018). For instance, several prominent firms utilize an outcome-driven strategy to ensure that projects for digital transformation produce the required outcomes at each level. Organizations can experiment with novel concepts based on quick piloting and scaling by segmenting large-scale, radical digital change into smaller, more manageable strategic expenditures (Li, 2019).

### ***Dynamic sustainable advantages through an evolving portfolio of temporary advantages***

Although delivering sustainable competitive advantage (SCA) is the primary goal of digital transformation, only some competitive advantages in the digital market are long-term sustainable. Most competitive advantages are ephemeral or fleeting and can disappear quickly or unexpectedly due to rival innovation or imitation (D'aveni et al., 2010; Li, 2019). The network effect and "winner-takes-all" market dynamic, where only one or two prominent firms may eventually prosper in any market segment, is one crucial new aspect of the digital economy. Temporary advantages can snowball with the growing return-to-scale dynamic when durable advantages are scarce and hard to come by. Some corporate executives increasingly seek consecutive transitory benefits rather than the illusive SCAs by experimenting with a changing portfolio of modest and occasionally dramatic technologies. The gains from each brief advantage are frequently negligible. Still, their combined impact over time can be substantial, and any one of these temporary advantages could be "the final straw" that tips the competition's scales. By doing this, SCAs are dynamically accomplished through a changing portfolio of transitory advantages, as new ones are incrementally added before older ones are lost. This is evident in the rivalry between American and Chinese digital businesses in China, such as the fight between Didi Chuxing and Uber and Alibaba vs. Amazon (Li, 2019).

**Table 2: Three New Strategies for Directing the Digital Transformation**

<b>Approach</b>	<b>Cases</b>	<b>Variation from standard approaches</b>	<b>Principal characteristics</b>
Innovating by experimenting	Alibaba Google Amazon VMware	Making and executing strategies has transitioned from a linear process to an iterative, recursive learning process.	Analyzing and calibrating strategy using tests to direct execution
Radical transformation through incremental approaches	Amazon Slack JD Didi	From a single extreme shift to a sequence of gradual, interconnected steps that together result in radical change	Through execution, strategy is generated, assessed, and calibrated constantly.
Dynamic sustainable advantages through an evolving portfolio of temporary advantages	Baidu Uber VMware Slack	From SCAs to a changing array of momentary, fleeting benefits	Utilizing a series of transient benefits to generate ongoing, cumulative benefits

Source: Own work based on Li (2020).

**1.2. Benefits and Challenges of Digital Transformation**

Digital transformation is becoming a significant force behind development and innovation in the corporate sector. Utilizing digital technology to alter corporate operations, procedures, and consumer experiences is known as "digital transformation." Adopting digital transformation has become increasingly crucial for organizations to be competitive and relevant in the constantly shifting business environment of the twenty-first century.

***Benefits of digital transformation***

There are several benefits connected to digital transformation. Based on current research and expert viewpoints, this section will list some of digital transformation's main advantages and benefits.

**1. Increased efficiency and cost savings**

Using technology like automation, artificial intelligence, and advanced analytics, according to McKinsey & Company, a worldwide management consulting organization, may help

businesses boost operational efficiency and realize cost savings (McKinsey, 2021). Companies may save labor expenses and increase productivity by automating routine operations and utilizing AI to improve workflows. Advanced analytics may also assist companies in finding operational gaps, which enables them to streamline procedures and cut waste. In general, organizations may benefit from digital transformation by streamlining their processes and cutting expenses, which boosts productivity and profits. Businesses may optimize processes and automate jobs using cutting-edge technology like sensors, cloud computing, and big data. This increases productivity and lowers operating costs. For instance, manufacturers may save downtime and maintenance costs while enhancing product quality by adopting predictive maintenance based on sensor data and machine learning algorithms (Brynjolfsson & McAfee, 2014).

## **2. Improved customer experiences**

Thanks to digital transformation, businesses may tailor client experiences using data analytics, artificial intelligence, and the Internet of Things (Siebel, 2019). Using the Internet of Things (IoT), digital transformation may provide new income streams and enhance consumer experiences through tailored offerings. Businesses may offer new products and services to clients, generating extra income streams and differentiating themselves from rivals by utilizing IoT to acquire real-time data and insights (Siebel, 2019; Kranz, 2019).

## **3. Creation of new revenue streams**

In Tom Goodwin's book "Digital Darwinism: Survival of the Fittest in the Age of Business Disruption," it is stated that businesses can use digital transformation to generate new revenue streams by utilizing emerging technologies to develop new goods and services, enter new markets, and develop creative business models (Goodwin, 2018). Businesses may establish new income streams by adopting the sharing economy model, for instance, by enabling consumers to rent or share their goods and services rather than purchasing them all together. In addition to creating new business models and development potential, this may boost client engagement and loyalty.

## **4. Enhanced agility and competitiveness**

Thanks to digital transformation, businesses may maintain agility by continuously adjusting to new technology and client demands. They may acquire data and information in real-time to make intelligent judgments, react to market developments, and develop fresh company ideas

and goods. By doing this, businesses may maintain competitiveness and find long-term success in the digital era (Rogers, 2016). Companies may receive real-time insights into market trends and client behavior by utilizing data analytics and other technology, enabling them to make educated decisions and swiftly reorient their strategy.

## **5. Improved collaboration and innovation**

By dismantling organizational silos and enhancing team collaboration, digital transformation may foster cooperation and creativity (Siebel, 2019). Businesses may encourage employee collaboration across divisions and locations, knowledge sharing, and creating fresh ideas and solutions by utilizing digital platforms and tools.

Digital transformation aims to assist organizations in increasing productivity, lowering expenses, improving customer experiences, and creating new income sources. Businesses may simplify their processes, automate repetitive tasks, and obtain real-time insights to make wise decisions by employing cutting-edge technologies like automation, artificial intelligence, big data, and the Internet of Things. As a result, the market becomes more competitive, and new business models, goods, and services are produced. By dismantling organizational silos and fostering teamwork, digital transformation promotes cooperation and creativity. Businesses must apply the appropriate KPIs and metrics to track progress and pinpoint improvement areas to assess the performance of digital projects. In conclusion, digital transformation offers several advantages that can aid companies in finding long-term success in the digital world.

### ***Challenges of digital transformation***

Although digital transformation has numerous benefits, there are certain possible drawbacks that firms should consider before starting their digital transformation path. The possibility of job displacement and the requirement for people to reskill to match the demands of digital technology are two of the most significant drawbacks (World Economic Forum, 2018). A substantial investment in new technology, software, and training may be necessary due to the potential costs associated with digital transformation. Digital transformation can also lead to unknown risks and vulnerabilities, including cybersecurity threats, data privacy concerns, and problems with regulatory compliance, according to a study article by Yu, Xiong, and Cheng (2019). Last but not least, a loss of human contact and client connection due to digital transformation may be detrimental to fostering customer loyalty and trust. To create a great customer experience, businesses must balance technology use and the requirement for

personalization and human touch, as noted by a study paper by Akaka and Vargo (2018). Common additional disadvantages of digital transformation are the following:

### **1. Technological dependency**

Digital transformation may result in a heavy reliance on technology, which may be troublesome if systems malfunction or staff members lack the technical know-how to use them. Businesses may experience a loss in production and income as a result. Organizations that rely too much on technology may become less adaptable and more susceptible to upheavals, according to a Cho and Kim (2019) study.

### **2. Data overload**

As digital technologies are used more often, they can produce vast amounts of data that are challenging to manage and adequately analyze. According to a study by Sharma and Yadav (2019), information fatigue brought on by data overload might impair a company's capacity to make wise judgments.

### **3. Cybersecurity risks**

Data breaches, ransomware attacks, and other types of cybercrime are possible hazards brought on by digital transformation. Businesses must ensure that their digital transformation strategy incorporates the proper security measures and risk management procedures, according to research by Accenture (2019).

### **4. Cultural resistance**

Employees who are used to old working methods may resist the digital transition. This might lead to a lack of adoption of new technology and procedures, which would be detrimental to the success of attempts to implement digital transformation. According to research by Kesharwani and Bisht (2019), cultural opposition to digital transformation might be a substantial roadblock.

### **5. Regulatory compliance**

Particularly in sectors like healthcare and finance that are subject to tight laws, digital transformation may present new compliance issues. According to a study by De Reuver and Bouwman (2019), companies must ensure that their digital transformation initiatives adhere to all applicable rules and guidelines to prevent future legal and reputational concerns.

Businesses may benefit significantly from digital transformation, including gains in production, profitability, and efficiency. Before beginning a digital transformation path, firms must consider several possible drawbacks. Two of the most significant disadvantages are the possibility of job displacement and the requirement for people to reskill to match the demands of digital technology. A substantial investment in new technology, software, and training may be necessary due to the potential costs associated with digital transformation.

Additionally, the digital revolution may lead to new dangers and weaknesses, including cybersecurity risks, data privacy worries, and problems with regulatory compliance. To create a pleasant customer experience, businesses must balance the use of technology and the requirement for personalization and human connection. The effects of digital transformation may include a high level of technology dependence, information overload, cultural resistance, and difficulties with regulatory compliance. The research articles mentioned above emphasize that firms must be aware of these possible drawbacks and reduce them to ensure the success of their digital transformation initiatives. Before beginning a transformation path, firms must carefully weigh a digital transition's potential benefits and drawbacks. Although digital transformation can have many advantages, it is also crucial to understand and manage the risks and difficulties that could arise. Only then can the transformation effort be successful.

### **1.3. Implementation Success Factors of Digital Transformation**

Due to the need to innovate, improve customer experience, and maintain competitiveness in an environment where the digital landscape is evolving quickly, digital transformation has become a significant concern for many businesses across several industries. However, many companies fail to achieve their desired results despite increased expenditures and efforts toward digital transformation. In addition to implementing new technology, a successful digital transformation necessitates a significant change in corporate culture, procedures, and thinking. Using current research and industry-specific best practices, this chapter strives to pinpoint the crucial success elements for digital transformation. Organizations may better plan and carry out their digital transformation programs, avoid common pitfalls, and unlock the full potential of digital technology by understanding the levers that drive effective digital transformation.

The chapter will discuss various elements of a successful digital transformation, including relationships with outside companies, leadership, people management, agile methods, customer centricity, and data-driven decision-making. The chapter will also offer helpful advice on how businesses may use these success criteria to their advantage as they embark on their digital

transformation journeys. Organizations may create a solid base for ongoing digital innovation and competitive advantage by concentrating on the crucial success elements for digital transformation.

### ***Leadership and vision***

Companies need a compelling vision successfully conveyed to the workforce by great executives to prosper in the digital revolution. These executives must also be prepared to invest in the equipment and software required for the digital transition. Strong leadership and a distinct vision are crucial success elements for digital transformation, claim Westerman et al. (2014).

### ***Employee engagement and training***

Organizational culture and mentality change are necessary for a successful digital transition. Employees must be motivated and taught to use new technology and procedures effectively. According to Westerman, Bonnet, and McAfee (2014), businesses should prioritize employee involvement to undergo digital transformation by giving workers the tools and assistance they need to adjust to new working practices and promote continual development. This involves funding training initiatives and cultivating a culture of experimenting and learning.

### ***Agile and adaptable approach***

A flexible and iterative approach is necessary for successful digital transformation, as companies regularly modify their strategy in response to new information and conditions. It entails adaptability, trying new things, learning from mistakes, and adjusting to maximize transformational efforts. (McKinsey & Company, 2019)

### ***Customer-centricity***

Customer centricity must be the driving force behind digital transformation. Businesses must focus on providing a smooth and tailored client experience across all channels. Customer-centricity has been identified as a critical success element for digital transformation, according to research by Westerman et al. (2014).

### ***Data-driven decision-making***

Large amounts of data produced by digital transformation can be utilized to guide decision-making. Businesses must have the required analytics capabilities and processes to gather,

evaluate, and take action on data insights. According to a study by Ponomarov and Holmström (2016), data-driven decision-making is crucial to digital transformation success.

### ***Collaboration and partnerships***

The success of digital transformation greatly depends on cooperation with external parties. Aagaard (2019) contends that for businesses to co-create and innovate new digital solutions, they must establish and capitalize on partnerships with external partners, such as suppliers, clients, and startups. Such alliances can introduce fresh perspectives, expertise, and resources, quickening the transformation process and improving success rates.

### ***Risk management and cybersecurity***

Digital transformation can create new risks and vulnerabilities, including cybersecurity threats and data privacy concerns. Businesses must have appropriate risk management and cybersecurity measures to protect against these risks. A research paper by Mishra et al. (2018) notes that effective risk management and cybersecurity are critical success factors for digital transformation.

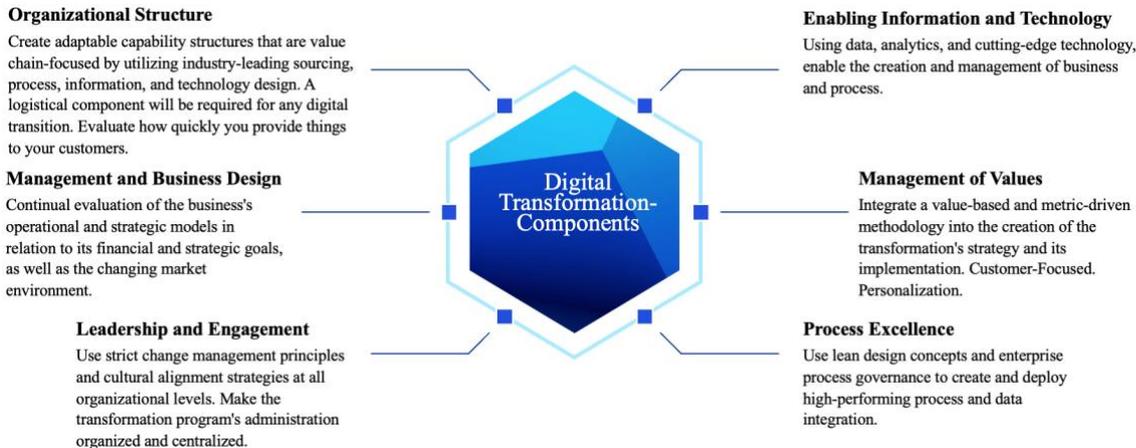
### ***Metrics and measurement***

Metrics and measurements must be emphasized in digital transformation to evaluate the success of digital projects. Businesses must implement the proper KPIs and metrics to monitor success and pinpoint areas for development. Effective metrics and measurement are crucial for a successful digital transformation, according to a Gartner (2018) analysis.

In conclusion, digital transformation can be a complicated process, but companies can use several crucial success elements to guarantee success. A customer-centric approach, flexible and adaptive decision-making, staff involvement and training, metrics and measurement, collaboration and partnerships, risk management and cybersecurity, and strong leadership and vision are a few of these. Businesses may improve their chances of success in digital transformation initiatives by concentrating on these key characteristics. In general, the digital transformation of organizations necessitates a deliberate, all-encompassing strategy that includes not just technology advancements but also organizational, cultural, and operational improvements. Firms may promote development, innovation, and consumer value in a continuously changing market by utilizing the possibilities presented by digital transformation

and overcoming the difficulties. To get a better overview of the most important factors of digital transformations, they are shown again in the figure below (LinkedIn, 2022).

**Figure 3: Embracing Digital Transformation - 6 Core Components**



Source: own work based on Enoche Andrade (2022).

**1.4. The Introduction of Digital Mastery**

In recent years, digital technology has changed how businesses function and engage with consumers. Many companies, however, have found it challenging to keep up with the technological advancement rate and fully appreciate the potential advantages of digital transformation. To overcome these difficulties, organizations must work toward digital mastery, or the capacity to use technology to accomplish strategic goals and add value. Westerman, Bonnet, and McAfee (2014) outline the critical competencies businesses must master to flourish in the digital era in their book "Leading Digital: Converting Technology into Business Transformation." Companies may become more inventive, customer-focused, and agile by taking a complete approach to digital transformation, giving them a competitive edge in today's quickly changing business environment.

"Digital mastery" describes an organization's capacity to successfully utilize technology to accomplish business goals and establish a long-lasting competitive advantage. Digital mastery, according to Westerman, Bonnet, and McAfee (2014), consists of three essential elements: 1) producing value through digital technology, 2) strengthening digital skills, and 3) assuring digital leadership. Using technology to build new goods and services, enhance current ones,

and discover creative ways to communicate with consumers is known as creating value through digital technology.

Developing digital capacities entails acquiring the knowledge and abilities necessary to utilize digital technologies internally and in partnership with external partners. A culture that encourages innovation and embraces change must be established to ensure digital leadership, and executives must be aware of and able to explain digital technology's strategic importance to the business.

Additionally, according to Westerman et al. (2014), having a robust digital architecture that enables the seamless integration of digital technologies, a flexible organizational structure that can quickly adapt to changing business needs, a culture that encourages experimentation and risk-taking, and a solid digital leadership team are all essential for achieving digital mastery. By concentrating on these characteristics, organizations may build the digital skills necessary to succeed in today's quickly evolving business environment. According to Westerman, businesses might aim to acquire four stages of digital mastery (Westerman et al., 2014, pp. 15-17). They are as follows:

**1. Beginner:** At this stage, businesses are only starting to investigate the potential advantages of digital technology. Although they could experiment with a few different technologies, they still need a well-rounded digital strategy.

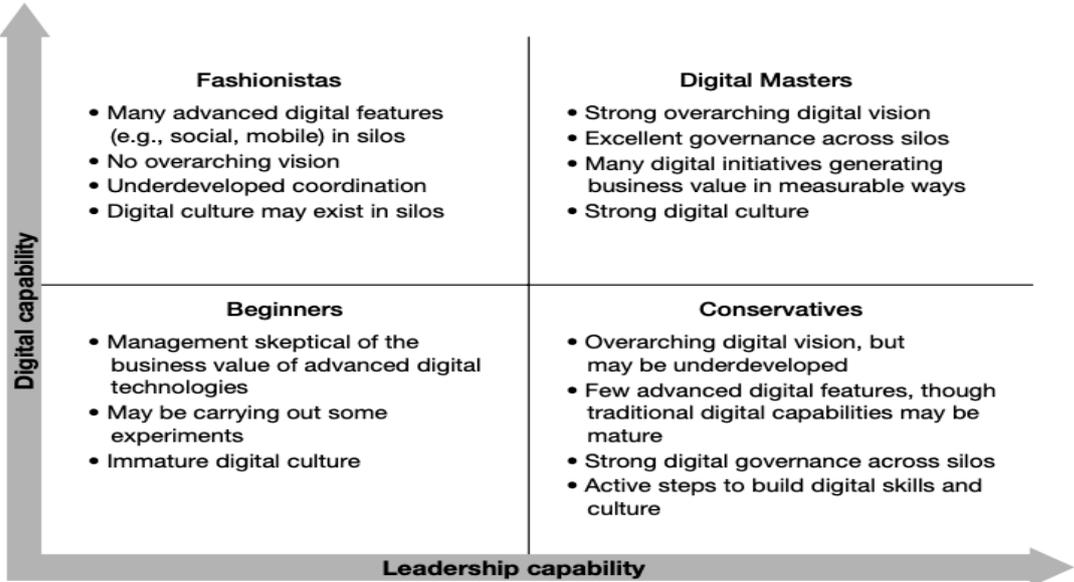
**2. Fashionista:** Organizations at this level are more methodical in using digital technologies but are still primarily concerned with leveraging technology for marketing and communication. They may have a solid online presence on social media or a well-developed website but have not yet wholly incorporated digital technology into their essential business procedures.

**3. Conservatives:** At the conservative level, businesses use digital technology to enhance their current operational procedures and business models. They use technology to increase productivity and efficiency and have a defined digital strategy aligning with their business plan.

**4. Digital Master:** The digital mastery level organizations operate is the "Digital Master" level. At this level, digital technologies have been fully incorporated into an organization's core business procedures and are used to develop new business models and revenue streams. They have created the digital skills required to carry out their defined digital plan, which aligns with the overall business strategy. Companies can swiftly adjust to shifting market conditions by constantly experimenting with new technology and business strategies.

Westerman et al. (2014) have created a Digital Maturity Matrix (Figure 4) to assist companies in determining their level of digital proficiency. The digital intensity and the intensity of the transformation management are the two dimensions used to evaluate enterprises in this matrix.

**Figure 4: The Level of Digital Mastery**



Source: George Westerman, Claire Calm ejane, Didier Bonnet, Patrick Ferraris, and Andrew McAfee, “Digital Transformation: A Roadmap for Billion-Dollar Organizations,” Capgemini Consulting and MIT Center for Digital Business, November 2011.

Managing digital transformation and incorporating digital technology into their core business activities is a challenge for retailers. The retail industry has changed significantly in recent years as digital technology becomes more widespread. Traditional retail models have been challenged, forcing businesses to change in order to compete. Digitalization has a significant influence on the retail industry, affecting things like supply chain management, marketing, and sales. Retailers must emphasize digital competence and build the essential digital capabilities if they want to succeed in the changing business environment. Retail companies may maintain a competitive advantage in the market by comprehending the phases of digital mastery and the elements that lead to digital success.

## **Chapter 2. Business Model Innovation**

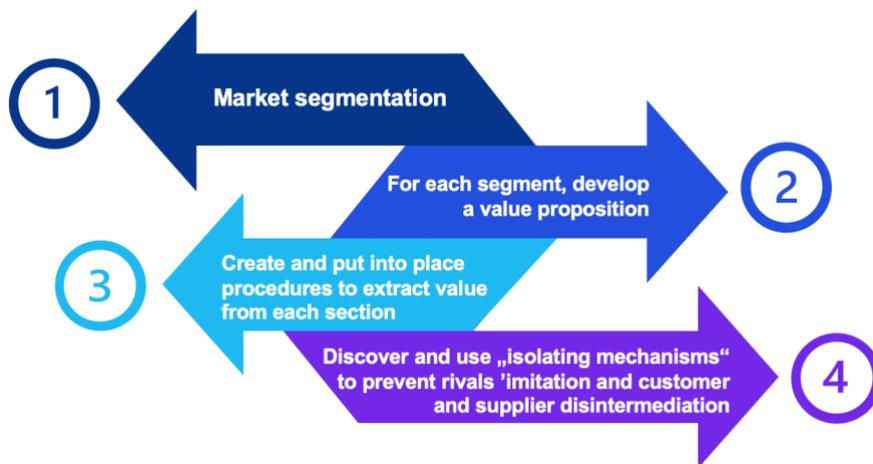
The development of business models is the subject of Chapter 2 of this thesis. It provides business model principles and emphasizes their significance in helping companies adjust to shifting market conditions. The chapter analyzes the difficulties, key components to success, and disadvantages of business model innovation. Furthermore, it focuses at the connection between business model innovation and digital transformation. The chapter also covers various innovation models, organizational structure, organizational culture, and change management as they pertain to effective business model innovation.

### **2.1. Business Model Concepts**

The creation, delivery, and capture of value by a corporation are all determined by its business model. A business model outlines the reasoning behind how a corporation produces income and turns a profit while offering clients products or services (Chesbrough & Rosenbloom, 2002). Scholars have put out a variety of methods for conceiving business models over the years, each with its viewpoint on the crucial elements and dynamics at play. The core business model methods of Teece (2010), Amit & Zott (2012), and Osterwalder & Pigneur (2005) will be summarized in this chapter. An overview of the critical distinctions between the fundamental methods will be given.

Teece (2010) offers one method for comprehending business models. He characterizes a business model as a dynamic system comprising four components: the value proposition, the revenue model, the target audience, and the skills necessary to provide the value proposition. Teece (2010) emphasizes the need to comprehend the relationships between these four components and gradually adjust them to achieve long-term success. This perspective on business models as flexible, dynamic systems highlights companies need to innovate and continually transform their business models. It is consistent with strategic flexibility (Teece, 2010). The following figure illustrates Teece's idea of a business model with all the mentioned characteristics.

**Figure 5: Business Model Concepts by Teece**



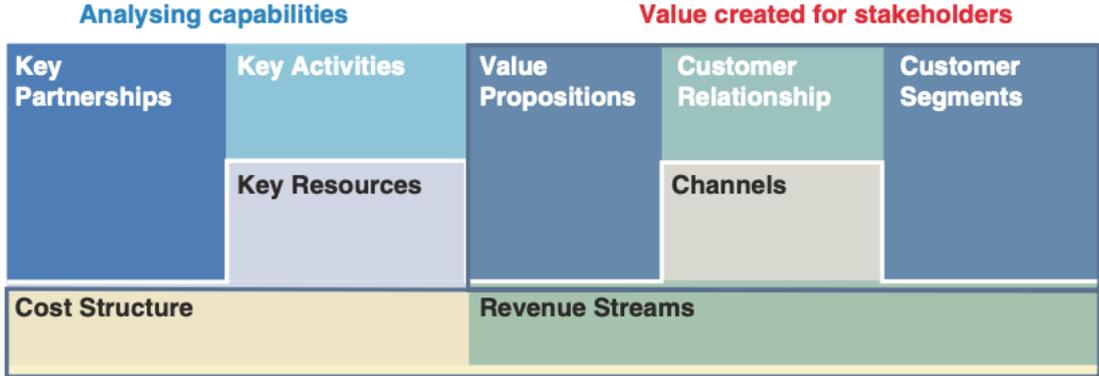
Source: own work based on Teece (2010).

Amit and Zott (2012) provide a different viewpoint on business models by highlighting the function of platforms in promoting value generation and capture. According to Amit and Zott, a business model is the organization of the information, product, and service flows, as well as a description of the numerous business players and their responsibilities that work together to produce and extract value from a network. They contend that companies may use platforms to exploit network effects, provide a competitive edge, and promote innovation. This viewpoint emphasizes the significance of comprehending the interactions between various actors and stakeholders in a business ecosystem and how businesses may strategically position themselves within that ecosystem (Amit & Zott, 2012).

Osterwalder and Pigneur (2005) offered a third method for visualizing business models. They created the Business Model Canvas (BMC), a visual tool that lists the nine components of a business model. Business models may be developed, examined, and improved using the BMC framework. Customer segments, value proposition, channels, customer connections, sales streams, essential resources, key activities, key partnerships, and cost structure are the nine components that make up the BMC. The BMC has gained popularity as a tool for business professionals and entrepreneurs alike since it offers a straightforward and organized manner to describe and improve a company's business model (Osterwalder & Pigneur, 2005). The Business Model Canvas, developed by Osterwalder and Pigneur in 2005, is the most well-known and frequently utilized business model innovation framework. This framework offers a comprehensive overview and opportunities for comparison and development through a graphic depiction of the business model's content. It is lauded as a straightforward method for creating business models and has become a standard within the industry. The canvas comprises nine

building blocks arranged in a rectangular sheet and analyzed individually and linearly. According to Osterwalder and Pigneur (2005), the customer segment is at the core of the business model. Therefore, the company should be designed around a deep understanding of the needs of a specific customer segment. They assert that the left side of the canvas emphasizes efficiency, while the right side is entirely focused on value (Fig. 6).

**Figure 6: Business Model Canvas**



Source: Aagaard p. 11 (2019).

In conclusion, academics have presented various methods for comprehending business models, each with a viewpoint on the crucial elements and dynamics involved. Amit and Zott (2012) emphasize the importance of platforms in facilitating value creation and capture, while Osterwalder and Pigneur (2005) offer a visual tool for analyzing and improving business models. Teece (2010) sees business models as dynamic and adaptable systems comprising four key components. Businesses may better explain their company plans, spot possibilities for innovation and growth, and ultimately develop a lasting competitive advantage by understanding the many conceptualizations of business models.

**2.2. Business Model Innovation**

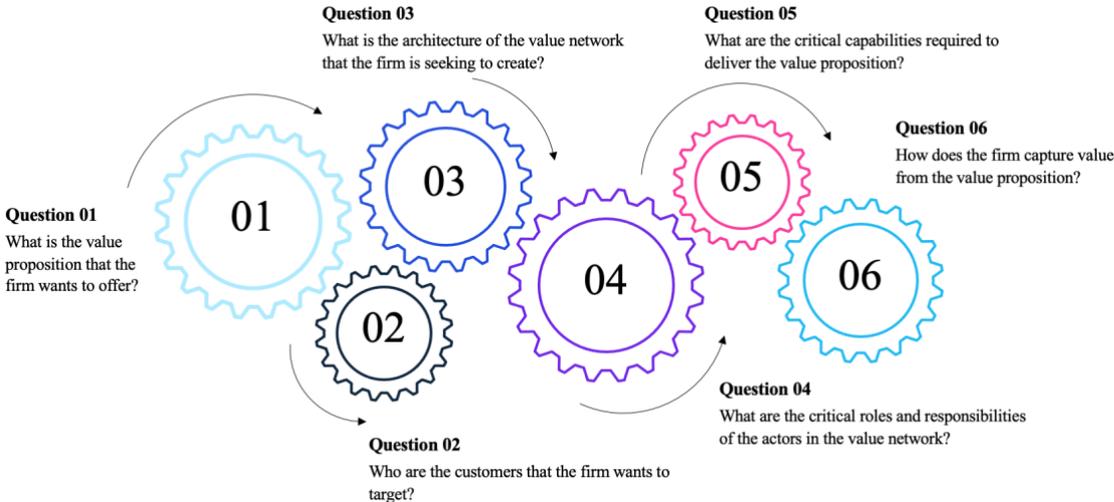
Business model innovation, which entails modifying one or more components of a company's business model to produce new value propositions and income streams, is essential to a company's long-term success. In their analyses of business models, Teece (2010), Amit & Zott (2012), and Osterwalder & Pigneur (2005) all touch on the idea of business model innovation.

The business model of a corporation should be seen as a dynamic system that may be modified to ensure long-term success, according to Teece (2010). To develop new value propositions and income streams, business model innovation, according to Teece, entails modifying one or more

components of a company's business model. Teece does not specify the sorts of BMI that should be used; instead, he believes that BMI is essential to establish and maintain a competitive edge.

BMI is essential in the context of platform-based business strategies. According to Amit & Zott (2012), there are three different types of BMI: configuration BMI, which entails modifying the design of current components to create a new business model; extension BMI, which entails adding new features to an existing business model to generate new value propositions and revenue streams; and transformational BMI, which entails completely rethinking and altering the company's business model to create a new industry or market. Moreover, Amit and Zott provide six questions that businesses should consider while pursuing business model innovation. These questions are shown in the following figure.

**Figure 7: Six Questions about Business Model Innovation**



Source: own work based on Amit & Zott (2012).

The Business Model Canvas, a visual tool that delineates the nine components of a business model, was created by Osterwalder and Pigneur in 2005. Business models may be developed, examined, and improved using the BMC framework. According to Osterwalder & Pigneur, business model innovation is crucial and entails modifying one or more of BMC's nine fundamental components to provide new value propositions and income streams. They contend that a process of research, experimentation, and implementation may lead to business model innovation.

In today's quickly evolving business climate, business model innovation is essential to long-term success. BMI is discussed differently by Teece (2010), Amit & Zott (2012), and

Osterwalder & Pigneur (2005). Still, they all agree that it entails altering one or more components of an organization's business model to develop new value propositions and income streams. Osterwalder & Pigneur present a visual tool for examining and improving a company's business model, while Amit & Zott offer a comprehensive framework for comprehending the many forms of BMI. Companies may find new possibilities and gain a competitive edge by knowing the numerous methods of business model innovation.

### **2.2.1. Challenges and Limitations of Business Model Innovation**

Business model innovation has emerged as a crucial component of corporate strategy as businesses work to preserve their competitiveness in the constantly changing business environment. The process of putting business model innovation into practice has its challenges and restrictions, however. With the help of Christensen et al. (2016)'s study, this chapter investigates the difficulties and limitations of business model innovation.

Finding and creating a fresh, profitable, and sustainable business model is one of the main problems businesses must face. According to Christensen et al. (2016), this challenge results from a lack of knowledge about the underlying dynamics of business models and the intricate relationships between their many parts. Companies may find it challenging to identify and establish a new business model that is both practical and sustainable due to the complexity of the existing business model and its underlying mechanisms. As a result, businesses would need to conduct a lot of research and analysis to pinpoint the elements that make up the current business model and how they interact. This may require a lot of time and resources. The resistance to change that frequently develops inside an organization is another obstacle to developing new business models. New business models may be difficult to execute because staff members may be reluctant to accept new procedures or tactics. Businesses must thus be aware of this difficulty and create measures that promote employee buy-in and involvement in the innovation process.

Moreover, Christensen et al. (2016) stress that adopting business model innovation can be expensive in terms of time and money. Organizations may need to invest in new technology, systems, and procedures to support the new business model. However, firms may experience significant implementation difficulties and small organizations with limited resources. Further, businesses may need to modify their current business procedures to adapt business model innovation, which might interrupt regular company operations. So, businesses must be ready to handle this disturbance and lessen how it affects their operations and customer service.

The possibility of unforeseen repercussions is another of business model innovation's drawbacks. According to Christensen et al. (2016), altering just one business model element can have repercussions across the whole firm and have unanticipated outcomes that were not considered during planning. Nevertheless, business model innovation may only sometimes be the optimal course of action, according to Christensen et al. (2016), who note that other tactics like product or process innovation could be more suitable in some circumstances.

Christensen et al. (2016) provide several tactics for overcoming the difficulties and constraints of business model innovation. Before attempting to innovate, they advise that businesses thoroughly grasp their current business strategy. An examination of the business model's underlying mechanics and the intricate relationships between its many parts should be part of this knowledge. The second recommendation by Christensen et al. (2016) is for businesses to take a flexible approach to business model innovation, employing a process of experimentation and iteration to develop and enhance their business model over time. Using this strategy, businesses can learn from their errors and modify their operations in response to input from consumers and other stakeholders. Lastly, Christensen et al. (2016) advise businesses to include all pertinent stakeholders in the business model innovation process besides the staff, customers, suppliers, and other partners. Companies may build business models more suited to the demands of their consumers and other stakeholders by incorporating stakeholders in the process and gaining valuable insights into their needs and preferences.

In conclusion, business model innovation is an essential component of business strategy that may support organizations in maintaining competitiveness in the constantly shifting business environment. However, Business model innovation has some difficulties and constraints, as this study has explored. Understanding these obstacles and regulations is essential for businesses, who should devise plans to get around them. The table below summarizes the difficulties and restrictions covered in this section. Businesses may effectively overcome the barriers to business model innovation and reap its potential rewards by taking a flexible approach to innovation, including essential stakeholders, and attentively addressing each obstacle and constraint.

**Table 3: Challenges and Limitations of Business Model Innovation**

<b>Challenges/Limitations</b>	<b>Description</b>
<b>Organizational difficulties</b>	
Unwillingness to change	The introduction of new business models might be hampered by existing organizational structures and procedures.
Insufficient resources	Innovative business models could need a lot of resources, such money, people, and technology, which might be hard to get or distribute.
Issues with coordination	Coordination between multiple organizational roles and stakeholders may be necessary for the implementation of a new business model, which can be difficult.
<b>Market challenges</b>	
Consumer apathy	New clients could be challenging to win, and existing ones might be hesitant to change.
Unpredictability of technology	It can be challenging to forecast the success of a new business model due to the ambiguity of emerging markets and technology.
Competing demands	A new business strategy could be met with aggressive tactics from existing rivals, making it challenging to establish a footing in the market.
<b>Business difficulties</b>	
Business trends	Innovation in business models could need changes in the larger industrial ecosystem, which can be challenging to control or foresee.
Regulatory restrictions	The deployment of innovative business models might be hampered by regulations and legislation that erect obstacles to entry.
<b>Strategy challenges</b>	
Strategic coordination	Integrating the organization's strategy, culture, and values with the needs of business model innovation can be difficult.
Uncertainty of success	It can be tough to justify spending money and effort when the success of a new business model is vague and hard to assess.

Source: own work based on Christensen et al. (2016).

### **2.2.2. Success Factors in the Implementation Process of New Business Models**

Implementing new business models is challenging, and success depends on several variables. The top five success criteria for the adoption of new business models will be covered in this chapter.

1. **Strong leadership:** According to Westerman, Bonnet, and McAfee (2014), effective leadership is essential for a new business model to be implemented successfully. In line with their findings, leaders must be committed to the implementation process, inform stakeholders about the new business model, and instill a sense of urgency in their staff. Strong leadership may help create a shared vision and excite the team, facilitating a more straightforward implementation process.
2. **Engagement of employees:** The effective adoption of new business models, according to Aagaard (2019), depends on employee engagement. Employers' commitment to the method may be increased, resistance to change can be decreased, and better implementation results can be achieved, claims the author, by incorporating employees in the implementation process from the beginning and considering their comments. Aagaard highlights the necessity of cooperation and communication between management and employees to adopt a new business model. She also says that open communication may assist in guaranteeing that staff feels appreciated and involved in the project's success.
3. **Resource allocation:** Resource allocation is a crucial success element for adopting innovative business models, claim Westerman, Bonnet, and McAfee (2014). The authors believe organizations must deliberately spend resources, including people, finances, and technology, to help the adoption process. The implementation procedure might fail, and the new company model could only be workable with enough resources. As a result, efficient resource management is crucial for adopting new business models.
4. **Collaboration:** Collaboration with outside partners, such as suppliers, clients, and startups, is also essential for effectively implementing new business models, claims Aagaard (2019). Companies can co-create new business models by collaborating with external partners because they can bring in new ideas, skills, and resources to improve the implementation procedure and increase the likelihood of success. Hence, to promote cooperation and propel the adoption of new business models, organizations must concentrate on developing strong ties with external partners.
5. **Flexibility and adaptability:** Besides helping businesses embrace new business models, flexibility and adaptability are crucial success elements in general, according to Westerman (2014). He contends that companies must be adaptable and receptive to shifting market dynamics and consumer demands. This necessitates a culture of experimentation and learning, where failures are seen as chances for growth. Flexibility and adaptation can help businesses be better prepared to succeed in a fast-paced commercial climate.

The success criteria for deploying new business models are consistent with McKinsey & Company's "The Five Trademarks of Agile Companies," according to the research presented previously (McKinsey & Company, 2019). These distinguishing characteristics include a strong foundation, a sense-and-respond system, a dedication to employee development, a network of teams, and an agile governance approach. These trademarks strongly resemble the success criteria previously found, emphasizing the need for an adaptive organizational structure that prioritizes ongoing development. These findings and McKinsey's methodology highlight the importance of agile organizations and implementation procedures for the success of new business models (McKinsey & Company, 2019).

**Figure 8: The Five Trademarks of Agile Organizations by McKinsey**



Source: Wouter Aghina, Aaron De Smet, and Kirsten Weerda, "Agility: It rhymes with stability," McKinsey Quarterly, December (2015). McKinsey.com.

The new business model implementation is a complex process that needs careful preparation and execution. According to research, the capacity to swiftly adjust to change, strong organizational culture, a clear grasp of the consumer value proposition, and good communication are all critical success elements. These results follow the five essential components of an agile company, as identified by McKinsey & Company. These components include a customer-centric strategy, cross-functional teams, a network of empowered teams, an attitude of "fail fast, learn faster," and adaptable procedures.

### **2.2.3. Negative Consequences of Business Model Innovation**

It is commonly acknowledged that business model innovation is a significant factor in corporate performance and competitiveness. Recent studies have brought attention to the possible drawbacks of BMI, which can have serious ramifications for businesses and their stakeholders. This chapter tries to give an overview of the detrimental effects of BMI and to explain the initiating causes and environmental conditions that result in these effects.

According to Sabaruddin et al. (2022), BMI can have a "dark side," unfavorable effects on the company, its stakeholders, and its environment. The causes of these detrimental effects are divided by the authors into four clusters: (1) managerial decisions and actions, together with three supporting factors that affect such decisions or actions; (2) trade-offs between the new and existing business models; (3) managers' capacity to manage BMI; and (4) the environment in which BMI is placed. The first category of elements involves managerial decisions and actions, which might have unfavorable outcomes, including resource depletion, organizational inertia, and stakeholder opposition. The authors contend that three underlying factors—cognitive biases, institutional constraints, and stakeholder salience—can affect these unfavorable outcomes. For instance, cognitive biases like confirmation bias and overconfidence might influence managers to undertake BMI projects that are not in line with the company's strategic objectives or capabilities. Adopting BMI projects that may not be appropriate for their environment can also be pushed by institutional constraints on businesses, such as regulatory or normative pressures. Stakeholders negatively impacted by BMI programs may oppose or object due to stakeholder salience.

Trade-offs between the new and existing business models are the focus of the second category of contributing elements. BMI projects can need large expenditures in new skills, resources, and procedures, which may necessitate compromises with current business structures. Adverse effects might result from these trade-offs, including cannibalizing already-existing goods or services, declining client loyalty, and decreased profitability. According to the authors, businesses must carefully manage these trade-offs by weighing the advantages and disadvantages of BMI efforts and ensuring they align with the company's strategic objectives.

The third category of factors concerns managers' capacity to control BMI. The authors contend that for managers to effectively oversee BMI efforts, they must have a variety of talents, including strategic vision, an entrepreneurial mindset, and knowledge of change management.

However, these skills may have favorable effects, such as the inability to carry out BMI projects, reduced organizational credibility, and poorer innovation performance.

The setting in which BMI is positioned is related to the fourth-factor cluster. The authors contend that the context might affect how BMI projects turn out by affecting the possibilities and restrictions that enterprises must deal with. The degree of competition, the regulatory landscape, and the accessibility of resources, for instance, can all have an impact on whether BMI projects are successful or not. Before launching BMI efforts, businesses, according to the authors, should thoroughly examine the circumstances and modify their plans.

### **2.3. Digital Transformation and Business Model Innovation**

This chapter examines how the digital revolution has affected the development of new business models in the context of the FMCG sector. With the speed at which technology is evolving and the necessity for businesses to modify their business models to remain competitive, this subject is particularly pertinent. To present an overview of the major topics and developments in this subject, this chapter will depend on a systematic literature review by Vaska et al. (2021) as well as the works of McAfee and Brynjolfsson (2018), Westerman et al. (2014), and Kagermann et al. (2019).

The use of digital technology to develop brand-new, innovative company practices is called the digital transformation of business model innovation. Changes to a company's value proposition, revenue streams, customer relationships, and critical operations may be part of this process. Vaska et al. (2021) contend that the digital transformation of business model innovation is a reaction to the FMCG industry's rising expectations for customer-centricity, sustainability, and agility. Vaska et al. (2021) study the digital transformation of business model innovation and offer insights into the state of research in this field in their structured literature review. Their research emphasizes the need for a strategic, all-encompassing approach to digital transformation and for firms to be adaptable and agile in response to shifting market conditions.

McAfee and Brynjolfsson (2018) emphasize the strategic approach to digital transformation and contend that businesses must develop digital capabilities that complement their business strategy. They claim that firms should invest in talent, culture, and leadership to facilitate effective digital transformation and that digital transformation should be seen as a strategic imperative rather than a technical endeavor.

Customer experience, operational procedures, and business models are the three main areas that firms need to concentrate on, according to Westerman et al. (2014) 's framework for assessing the influence of digital transformation on business models. They contend that firms may adjust their business models to shifting market conditions by implementing digital transformation, creating new consumer experiences, and streamlining operational procedures.

In the context of digital transformation, Kagermann et al. (2019) also highlight the significance of business model innovation, contending that businesses must rethink their business models to generate value in a digital environment. They recommend that companies concentrate on developing partner and customer ecosystems that can co-create value and use data and analytics to provide fresh insights and chances.

These examples demonstrate the significance of a comprehensive and all-encompassing approach to business model innovation and digital transformation. Businesses must develop digital capabilities that complement their company plans while adapting to rapidly shifting market conditions. Organizations may generate new value for consumers and stakeholders while promoting development and competitiveness in a fast-changing business environment by embracing digital transformation and business model innovation. Vaska et al. (2021), who reviewed the literature on the digital transformation of business model innovation, advise that future studies should concentrate on several essential topics. Initially, they advise looking at how various aspects of the company model, such as the value proposition, client groups, and income streams, are impacted by digital technology. Second, they advise looking at how businesses may successfully handle the conflicts brought on by the digital transition, such as finding a balance between the demand for innovation and the need for consistency and stability. They suggest investigating the function of partnerships and ecosystems in developing new digital business models. Lastly, they recommend looking at how business model innovation is impacted by digital transformation in specific sectors and environments. By concentrating on these topics, future studies can understand how businesses might use digital technology to reinvent their business models and gain a competitive advantage in the digital age.

#### **2.4. The Structure of Business Model Innovation**

This chapter presents an overview of the numerous innovation models, organizational structures, and behavioral components of business model innovation. The chapter looks at how various innovation models may be used for BMI, examines various organizational structures for BMI, and discusses how strong organizational culture, change management, and behavioral

factors are. In order to provide light on the structure of BMI and its consequences for businesses and their stakeholders, the chapter uses the body of current literature.

### **2.4.1. Examination of Different Innovation Models**

Innovation is critical to corporate success and expansion in today's fiercely competitive business world. To keep one step ahead of their rivals and adapt to the shifting demands of their consumers, businesses are increasingly embracing various innovation methods. This chapter will examine several innovation models and how well they promote innovation. (Foss et al., 2018)

- 1. Open innovation model:** Open innovation is a collaborative strategy that entails exchanging concepts, information, and resources among various businesses to produce new goods and services. According to Chesbrough (2003), open innovation is a new paradigm for developing and capitalizing on technology. Many prosperous businesses, like Procter & Gamble, have embraced this strategy, which employed open innovation to create new goods like Crest Whitestrips. There are several types of open innovation: connected open innovation, inbound open innovation, and outbound open innovation. Each type has advantages and disadvantages, so businesses must select the one that best suits their requirements and objectives.
- 2. Closed innovation model:** The classic innovation paradigm known as "closed innovation" relies on internal resources to create new goods and services. Companies like Apple, which has a highly secretive culture and depends on its resources to produce new products like the iPhone, have employed this technique. According to Teece (2010), businesses with solid internal R&D capabilities may use the closed innovation model effectively. This strategy, however, can also result in a lack of imagination and an inability to see outside opportunities and risks. To spur innovation, businesses must balance internal R&D capacity and external cooperation.
- 3. Distributed innovation model:** The distributed innovation paradigm relies on a broad community of individuals to crowdsource ideas and solutions, sometimes via online platforms. According to Lakhani and Panetta (2007), this paradigm can help resolve complicated issues requiring various abilities and expertise. For instance, NASA has employed the dispersed innovation paradigm to create new technology for space exploration. The need to manage a large number of contributors and assure the quality of

the contributions are only two of the difficulties this approach faces. Businesses must carefully plan and oversee their dispersed innovation processes to ensure their efficacy.

4. **Business model innovation:** Innovation in business models entails altering how a firm generates, distributes, and collects value. According to Chesbrough and Bogers (2014), business model innovation may be a potent strategy for establishing new markets and upending existing ones. For instance, by developing a new business model enabling people to rent their homes to tourists, Airbnb has upended the hotel sector. Product, process, and customer-based innovation are just a few examples of how business model innovation may occur. Companies must select the most suitable form based on their unique needs and objectives because each form has possibilities and obstacles.

#### **2.4.2. Organizational Structure and Business Model Innovation**

Businesses must modify their organizational setups and operational procedures to accommodate the considerable digitalization changes to remain competitive in the digital age (Edvardsson et al., 2019). Pivoting current business models and adopting ambidexterity through structural separation are the main organizational strategies for business model innovation (BMI). As part of corporate venturing, pivoting implies changing current business models. In contrast, ambidexterity entails forming distinct business units, either organically or through alliances or acquisitions, to manage a portfolio of business models.

Consumer expectations, market dynamics, and competitive factors have all been significantly impacted by digitalization on how firms conduct their operations (Edvardsson et al., 2019). Organizations must embrace digitization and integrate it into their primary strategy to prosper in the digital era. Utilizing cutting-edge technology, data-driven insights, and digital channels will enable you to improve customer experiences, spur innovation, and increase operational effectiveness. Organizations must embrace more adaptable frameworks that promote collaboration, innovation, and cross-functional integration since traditional hierarchical structures are frequently inadequate for the demands of the digital age.

To be flexible, digital and e-commerce divisions must be integrated (Edvardsson et al., 2019). In order to advance digital transformation and take advantage of online opportunities, these units are crucial. Businesses may promote seamless integration by encouraging cross-functional cooperation, positioning digital units strategically within the organizational structure, encouraging information exchange, and making talent development investments. However, becoming digital-ready requires more than just structural changes. It calls for a culture shift that

embraces a digital mindset and fosters a learning environment that rewards creativity and risk-taking companies must constantly watch technological breakthroughs, customer trends, and industry changes to stay ahead in the digital world.

In conclusion, organizational reforms are required to make organizations digitally ready in light of the corporate landscape's growing digitalization (Edvardsson et al., 2019). Businesses may position themselves for success in the digital age by integrating digital and e-commerce divisions, establishing a culture of cooperation and creativity, and adopting a digital mentality. Additionally, businesses may efficiently manage their portfolio of business models and take advantage of the possibilities and difficulties presented by the digital era by using either the pivoting or ambidexterity strategy.

### **2.4.3. Organizational Culture, Change Management, and Behavioral Aspects**

Organizations must embrace new technology while developing the behavioral elements enabling digital transformation. Using information from the 2019 article by Warner and Wäger titled "Building Dynamic Capabilities for Digital Transformation: An Ongoing Process of Strategic Renewal," this chapter explores the impact of behavioral factors in creating dynamic capabilities for digital transformation.

**Behavioral Aspects and Digital Transformation:** According to Warner and Wäger (2019), digital transformation requires a significant adjustment in everyone's attitudes and behaviors. Although technology acts as an enabler, the success of transformation projects ultimately depends on human factors. Organizations must promote a culture of creativity, flexibility, and ongoing learning to succeed in the digital era.

**Effective Leadership and Change Management:** Organizations must convert into learning organizations that encourage knowledge sharing, collaboration, and cross-functional integration in order to thrive in the digital transformation process (Warner & Wäger, 2019). Promoting creativity, agility, and adaptation requires tearing down silos and fostering knowledge-sharing between teams and departments. Organizational learning may be accelerated by establishing platforms and procedures that encourage cooperation, such as cross-functional task groups or innovation laboratories.

**Employee Engagement and Empowerment:** For digital transformation efforts to be implemented successfully, employees must be empowered and engaged (Warner & Wäger, 2019). Employers should include staff members in the transformation process and solicit their

opinions and suggestions. Employees with access to training and development opportunities are better prepared to adopt new working practices and digital technology. Employees are empowered to actively participate in digital efforts by working in an atmosphere that supports autonomy, initiative, and risk-taking, which promotes an innovative and entrepreneurial culture.

**Organizational Culture and Mindset:** Organizational culture and mentality significantly impact how successful digital transformation efforts are, say Warner and Wäger (2019). Fostering a culture emphasizing adaptability, experimentation, and constant progress is essential. Organizations may adopt new technology, investigate inventive business models, and adjust to changing client requirements by adopting a growth mindset that sees setbacks as learning opportunities and change as a constant. Leadership plays a crucial role in forming and ingraining this culture by fostering a shared vision, encouraging openness to change, and recognizing and rewarding experimentation and learning.

## **Chapter 3. Digital Transformation Implementation in the Retail Industry**

The effects of digital transformation on new business model innovation in the retail industry are examined in Chapter 3. The concept of Porter's Five Forces is investigated in the context of digital transformation. The next section of the chapter explores particular digital transformation efforts, German retail chains' innovative business models, and current market trends.

### **3.1. Digital Transformation and Porter's Five Forces Analysis in the Retail Industry**

A well-known paradigm for analyzing the competitive environment of an industry is Porter's Five Forces (Porter, 2008). Since its creation by Michael Porter in 1979, it has been a widely used tool for strategic analysis in the corporate world. The framework takes into account five main forces: (1) the potential for new entrants; (2) the bargaining power of suppliers; (3) the bargaining power of buyers; (4) the likelihood of the emergence of substitute goods or services; and (5) the intensity of competition within the industry (Porter, 2008).

The rise of e-commerce and internet platforms has caused tremendous upheaval in the retail sector. The simplicity with which internet retailers may be set up has heightened the prospect of new competitors, escalating market competitiveness (Kaplan & Haenlein, 2019). The negotiating power of individual suppliers has decreased due to online retailers' increased access to a wider variety of suppliers (Huang & Sarigöllü, 2014). Additionally, the convenience and transparency of online buying have given consumers more power since they can easily compare prices and items across many stores (Kaplan & Haenlein, 2019). Online shopping has become a common substitute for conventional brick-and-mortar retailers, which has heightened the danger of substitutes as e-commerce has grown (Huang & Sarigöllü, 2014). As a result, the level of competition in the retail sector has increased, forcing merchants to improve their products to stay competitive (Kaplan & Haenlein, 2019).

In conclusion, the digital revolution has impacted the retail sector, resulting in greater competition, diminished supplier negotiating strength, increased consumer bargaining power, increased threat of replacements, and heightened competitive rivalry. In order to compete, retailers must adjust to a changing market.

### **3.2. Digital Transformation Inside the Retail Industry**

Fast-moving consumer goods (FMCG) and the retail sectors are intertwined because FMCG items are frequently supplied to consumers directly through retail channels. FMCGs are

products with a short shelf life, are quickly sold at low prices, and are perishable (Kotler et al., 2021). FMCG products include food and drinks, cosmetics, and cleaning supplies. Retailers are essential to the FMCG business because they offer the means via which these items are distributed to consumers.

The direct selling of products or services to customers defines the retail industry, which includes a variety of establishments, including brick-and-mortar stores, internet retailers, supermarkets, department stores, and specialty shops (Noe, Hollenbeck, Gerhart, & Wright, 2020). This industry has seen considerable changes recently due to the influence of digital technology and the growth of e-commerce. In order to improve consumer experiences, streamline processes, and spur corporate growth, the retail sector is undergoing a digital revolution (Kotler et al., 2021). This introduction sets the context for analyzing the impact of digital transformation on this sector by giving a quick overview of the retail business.

Digital transformation has dramatically influenced the retail sector, requiring considerable company structure and process adjustments. Retailers are adopting digital strategies due to the emergence of e-commerce, mobile technology, and social media, which have altered consumer expectations and behavior (Dwivedi et al., 2020). Digital technologies are being used by retailers to improve consumer interaction, streamline operations, and develop fresh business ideas.

Incorporating omnichannel strategies is one of the leading forces behind business model innovation in the retail sector. Retailers are currently working to offer a seamless consumer experience across various touchpoints, such as physical shops, online, mobile applications, and social media platforms (Nambisan, 2017). Retailers may connect with customers at various points in their buying journeys, customize interactions, and provide practical choices like click-and-collect and same-day delivery by integrating numerous channels.

The application of data analytics and artificial intelligence (AI) is a further driver of business model innovation in the retail sector. Retailers use big data to understand consumer preferences better, forecast trends, and manage inventories (Verhoef et al., 2015). Retailers may customize suggestions, offer virtual support, and automate procedures with AI technology, improving the entire consumer experience.

Additionally, business model innovation in the retail sector is driven by customer-centricity and individualized experiences. Retailers are emphasizing more on comprehending and

accommodating each of their customer's unique wants and preferences through customized experiences and personalized products (Brynjolfsson & McAfee, 2017). Retailers may collect and analyze enormous volumes of consumer data to get insights into shopping behaviors, preferences, and purchasing patterns by utilizing sophisticated analytics, artificial intelligence, and machine learning (Brynjolfsson & McAfee, 2017).

Nevertheless, the difficulties with business model innovation in the retail sector must be acknowledged. Retailers have several challenges, including requiring employees with digital skills, organizational resistance to change, and legacy systems (Dwivedi et al., 2021). As merchants gather and examine enormous volumes of consumer data, safeguarding data privacy and security is also paramount (Verhoef et al., 2015).

In conclusion, digital transformation has become a strategic priority for retailers to succeed in the shifting retail market. Retailers may promote partnerships, drive business model innovation, and provide better consumer experiences by utilizing data analytics and artificial intelligence through omnichannel strategies. Retailers may succeed in the digital world by overcoming obstacles and embracing digital transformation as a lifelong endeavor.

### ***Drivers of digital transformation in the retail industry***

The rise of e-commerce, changing consumer behavior, and the expanding use of digital technology to improve customer experience and operational efficiency are all driving the retail industry's digital transformation. The necessity for retailers to react to shifting consumer tastes and behavior, as well as the opportunity for digital technology to boost operational effectiveness and cut costs, are among the main forces driving the digital transformation of the retail industry, according to McKinsey & Company (2021b). Retail Week (2021) emphasizes the significance of data-driven decision-making and the application of cutting-edge technologies like augmented reality and artificial intelligence in driving digital transformation in the retail sector. According to Hänninen et al. (2017), multi-sided platforms are emerging as significant forces behind organizational change in the retail sector. These platforms let retailers use data and analytics to enhance customer experience and optimize operations.

### ***Opportunities of digital transformation in the retail industry***

Several opportunities are presented by the retail sector's digital transformation, including the chance to improve the customer experience through convenient and personalized shopping experiences, the chance to use data and analytics to optimize operations and cut costs, and the

chance to tap into new markets and clientele through e-commerce and digital marketing channels. Retail Week (2021) emphasizes utilizing data-driven insights to optimize inventory management and supply chain operations. McKinsey & Company (2021b) emphasizes the potential for digital technologies to enable retailers to respond more quickly to changing consumer needs and preferences. According to Hänninen et al. (2017), multi-sided platforms can allow merchants to use data and analytics to streamline processes and enhance customer satisfaction while opening up possibilities for new income streams through partnerships and collaborations.

### ***Limitations of digital transformation in the retail industry***

The retail sector has many prospects due to digital transformation, but certain restrictions and difficulties must be overcome. These include the requirement for substantial expenditures in infrastructure and technology, the possibility of data privacy and security issues, and the difficulty of integrating new technology into current systems and procedures. According to McKinsey & Company (2021b), many retailers deal with outdated IT systems and segregated data, making it challenging to implement new technologies and efficiently use data and analytics. The need for retailers to make sure that digital transformation initiatives align with company objectives and consumer expectations and the necessity of investing in the right skills and competencies is highlighted by Retail Week (2021).

In conclusion, the retail sector is undergoing a fast digital transition, offering prospects for individualized shopping experiences, efficient operations, and new revenue sources. However, some issues need to be resolved, including integrating new technologies into old systems and procedures and making large expenditures on infrastructure and technology. Retailers must invest in the proper skills and competencies, match their technology and data strategies with their entire business strategy, and align their transformation initiatives with business goals and consumer demands.

### **3.3. Business Model Innovation in Retail Chains in Germany**

Germany's retail chain business is changing due to digital transformation, shifting consumer tastes, and environmental concerns. Retail companies in Germany are implementing cutting-edge business concepts to stay competitive and suit the changing demands of consumers. This chapter looks at recent changes in the German retail chain industry's business model innovation.

The German retail sector now relies heavily on e-commerce, and B2C e-commerce has grown significantly in recent years. B2C internet income in Germany climbed from one to three million euros at the start of the twenty-first century to about 87 billion euros in 2021, according to a Statista (2023) analysis. In 2022, this amount is anticipated to surpass 97 billion euros. The top online retailers account for over 40% of German e-commerce income (Statista, 2023).

The German retail sector places a high priority on business model innovation as a research and practice area. Using data analytics to customize the consumer experience is one new trend in this field. Kagermann et al. (2019) found that German merchants increasingly adopt data analytics to learn more about customers' preferences and behavior. As an illustration, the online apparel retailer Zalando employs data analytics to offer tailored suggestions to its consumers based on their browsing and purchase history (Kagermann et al., 2019).

Adopting sustainable practices is another trend in business model innovation among German retail companies. Customers search for retailers who share their beliefs as they become more ecologically concerned. According to a study by Schaltegger et al. (2019), sustainable practices have been adopted by German retailers like Edeka and Rewe, including decreasing packaging waste, buying locally produced goods, and utilizing renewable energy sources.

In summary, it is challenging for German retail chains to maintain competitiveness and adjust to shifting consumer needs. Retailers may better serve their consumers and set themselves apart from competitors by implementing business model innovation methods like data analytics and sustainability practices. These tactics may be successfully used in practice, as shown by real-world examples from Zalando, Edeka, and Rewe.

### **3.4. Current Trends in the Retail Industry**

Current social, economic, and technical developments are driving a wave of disruptive tendencies in the retail sector. Retailers must follow these trends if they want to remain competitive and relevant. This chapter examines some recent changes in the retail industry based on unique research articles by Derqui et al. (2022), Kraus et al. (2021), and Vaska et al. (2021).

The fast growth of e-commerce and the introduction of direct-to-consumer (D2C) channels is one significant trend in the retail sector. Retailers are investing significantly in their online presence and developing their e-commerce platforms as more customers switch to online buying. Lockdowns and social isolation policies imposed in response to the COVID-19

epidemic forced customers to turn to internet shopping, significantly accelerating this trend (Schallmo et al., 2020). The rising popularity of locally made, organic, and sustainably sourced goods, particularly those related to health and well-being, is another significant trend. Customers are prepared to pay extra for socially conscious products as they grow more ecologically and socially aware. Retailers are reacting by reexamining their product lines, packaging, and supply chain procedures to lessen their carbon impact and increase their feeling of social responsibility (Benevenuti et al., 2021).

Retailers are utilizing cutting-edge technologies like artificial intelligence (AI), robots, and blockchain to improve consumer experiences, increase product quality and safety, and simplify supply chain operations as part of the digital revolution affecting all industries, including retail. Chatbots and AI-powered virtual assistants customize the purchasing experience and offer tailored customer care (Varghese et al., 2021). In order to increase supply chain transparency and give customers the ability to track the provenance of items, blockchain technology is being used. Additionally, retailers increasingly use influencer marketing and social media to increase brand awareness and consumer interaction, especially among younger groups. Through influencer partnerships, platforms like Instagram and TikTok increase brand awareness (Grewal et al., 2021).

Derqui et al. (2022) underline the importance of trust in fostering practical innovation within the retail sector. They contend that establishing a positive feedback loop of innovation depends on building stakeholder trust through collaborative innovation. In their thorough summary of the study on digital transformation and its effects on business, Kraus et al. (2021) emphasize that it involves more than simply technology and calls for a fundamental reevaluation of company procedures, processes, and customer interactions. As shown by their comprehensive literature analysis on the digital transformation of business model creation, Vaska et al. (2021) also emphasize the significance of digital technology in creating new, sustainable, and morally upright business models.

In conclusion, the retail sector is undergoing trends such as e-commerce growth, sustainability emphasis, digitization, social media usage, and the development of trust. Retailers must be aware of these developments to remain competitive and continue providing value to their consumers.

## **Chapter 4. Empirical findings: A Multiple Case Study of Retail Chains in Germany**

**This study aims to recognize how digital transformation shapes business model innovation among grocery retailers.** The following research questions will be specifically addressed:

- 1. What are the motives for conducting digital transformation by big grocery retailers?*
- 2. What are the internal and external determinants of the structure of business model innovation of big grocery retailers while undergoing digital transformation?*
- 3. What are the facilitating and hindering factors of digital transformation as conducted by big grocery retailers?*
- 4. What are the individual and organizational consequences of digital transformation driving business model innovation?*

### **4.1. Research Design**

The research methodology for this study, which employs a multiple case study technique, is described in this chapter. This approach was justified based on Yin (2018) 's suggestions, which highlighted its capacity to offer a complete analysis compared to a single case study. The following traits of the selected approach match Yin's (2018) recommendations:

First, rather than concentrating on certain parts of the phenomena, the instances chosen for this research will be holistic, allowing for a thorough investigation of the whole phenomenon. By taking into account how numerous variables interact within the actual operational settings of the participating firms, this technique allows a thorough knowledge of the study issue.

Second, expert interviews will serve as the study's primary data source. Semi-structured interviewing will enable flexibility in addressing the study issues while preserving consistency in data gathering. Secondary data sources, including organizational records and trade journals, will supplement and triangulate the interview data.

A methodical coding procedure will be used for data analysis, adhering to Yin's (2018) recommendations. The transcripts of the interviews and secondary data will be coded to find recurrent themes and patterns. The codes will then be arranged into more general categories and subthemes to make seeing connections and trends among the examples easier. This study will combine pre-existing hypotheses with new insights drawn from the data using deductive and inductive methods.

This study's objective is to provide theoretical revelations from numerous case studies that are consistent with the framework brought forward by Eisenhardt and Graebner (2007). Exploring cross-case trends and comparisons will be a part of the study, which will help the discipline develop and improve its theories.

Construct validity, internal validity, external validity, and reliability are the four main factors that will be considered to ensure the quality of the case study findings (Yin, 2018). Through careful case selection and the triangulation of several data sources, construct validity will be guaranteed. Maintaining a transparent evidence chain and addressing other explanations can improve internal validity. The selection of various situations and the supply of in-depth background descriptions will boost external validity. Reliability will be developed through organized methods for gathering and analyzing data, thorough record-keeping, and member checks to confirm data interpretations.

#### **4.1.1. Case Selection Criteria**

This study examines how two German retail businesses have adapted new business strategies and gone digital. Case studies were chosen following standards pertinent to the retail industry and digital transformation. The instances chosen align with Siebel's (2019) advice to cover various aspects of digital transformation for a thorough grasp of its advantages and problems. The research assesses the elements impacting effective digital transformation in the retail industry through various scenarios.

According to studies by Derqui et al. (2022), Kraus et al. (2021), Vaska et al. (2021), Hänninen et al. (2017), Verhoef et al. (2015), Brynjolfsson & McAfee (2017), and Dwivedi et al. (2020), several characteristics were taken into consideration. In order to comprehend the dynamics of digital transformation and business model innovation in the retail industry, it is essential to grasp a variety of factors covered by these criteria. The criteria take into account things like how much the retail chains have digitalized, how they have incorporated multi-channel retailing strategies, how they have used emerging technologies, how they have adopted customer-centric strategies, how they have implemented data-driven decision-making, and how they have put a lot of emphasis on sustainability and ethical business practices.

**Table 4: Suggested Case Selection Criteria in Qualitative Research of Companies in the Retail Industry**

Differentiating factors	Similarity Factors	Why they are logical
Retail format	Customer experience	It enables a thorough investigation of how retail organizations prioritize customer experiences and reveals the unique dynamics and tactics associated with various retail forms.
Geographic scope	Supply chain management	This allows to analyze how retail businesses manage their operations across many sites and how their supply chains affect their general effectiveness and success.
Technology adoption	Product category	It permits an examination of how retail businesses navigate various product categories and how they use technology to improve their operations, customer experiences, and overall competitiveness.

Source: own work based on Derqui et al. (2022), Kraus et al. (2021), Vaska et al. (2021), Hänninen et al. (2017), Verhoef et al. (2015), Brynjolfsson & McAfee (2017), and Dwivedi et al. (2020)

**Table 5: Characteristics of the Selected Retail Companies**

	Company Case	Company A	Company B
<b>Similarities</b>	Customer experience	Prioritize customer experience and aim to provide excellent service	Focus on the client experience and strive to deliver superior service.
	Supply chain management	Efficient supply chain management systems and collaborations with partners	Effective partner collaboration and supply chain management systems
	Product category	Groceries, household items, fresh produce, personal care products, fast moving consumer goods	Groceries, household items, fresh produce, personal care products, fast moving consumer goods
<b>Differences</b>	Retail format	Traditional stores, online platforms, delivery services	Traditional stores only
	Geographic scope	Europe-wide representation	Focus on the German market
	Technology adoption	Greater commitment to integrating digital technology into their daily operations and contacts with customers	Adopts and incorporates digital technology more gradually into its business processes and consumer interactions

Source: Own work

Companies A and B are both retailers who operate in the same sector. They approach customer experience, supply chain management, and the product categories they offer similarly in several ways. Both companies place a high priority on offering excellent customer service and are

striving to achieve this. They cooperate effectively with partners and have excellent supply chain management systems. They also sell various goods, such as groceries, home goods, fresh vegetables, and personal care items.

The two companies do, however, differ significantly from one another. Company A uses conventional storefronts, online marketplaces, and delivery services, whereas Company B mainly uses conventional brick-and-mortar stores. Geographically, Company A is increasing its influence throughout all of Europe, but Company B is concentrating solely on the German market. They differ in their approaches to using technology, with Company A displaying a more substantial commitment to incorporating it into its everyday operations and customer contacts. At the same time, Company B embraces and integrates it more gradually.

As a result, Company A and Company B differ in retail format, geographic reach, and technology adoption while being retailers in the same sector with shared commonalities in customer experience, supply chain management, and product categories. These variations reflect how they have met client requirements and conducted business in their areas.

#### **4.1.2. Data Collection and Analysis**

The data sources for this study come from two primary sources: (1) semi-structured interviews with decision-makers and (2) secondary data sources. Two semi-structured interviews per case with selected corporate managers, systematically analyzing publicly available information and triangulating the data collected through the interviews and secondary sources. Based on the researcher's professional network and relevant networking sites like XING and LinkedIn, interviewees were chosen based on the industry, duration of employment, years of service, and gender.

Table six offers the fundamental framework of the interviews, developed from the research topics addressed in this thesis, as the basis for all future analyses of the interview data. Additionally, the appendix has a thorough interview guide, which includes particular questions created to motivate and direct the interviewees.

**Table 6: Structured Interview Framework**

<b>Interview topic guide</b>
<b>1. Company history overview</b>
<b>2. Current strategy and business model</b>
<b>3. Challenges in implementing digital transformation solutions</b>
<b>4. Business model innovation within the context of digital transformation</b>
<b>5. Conclusions</b>

Source: own work

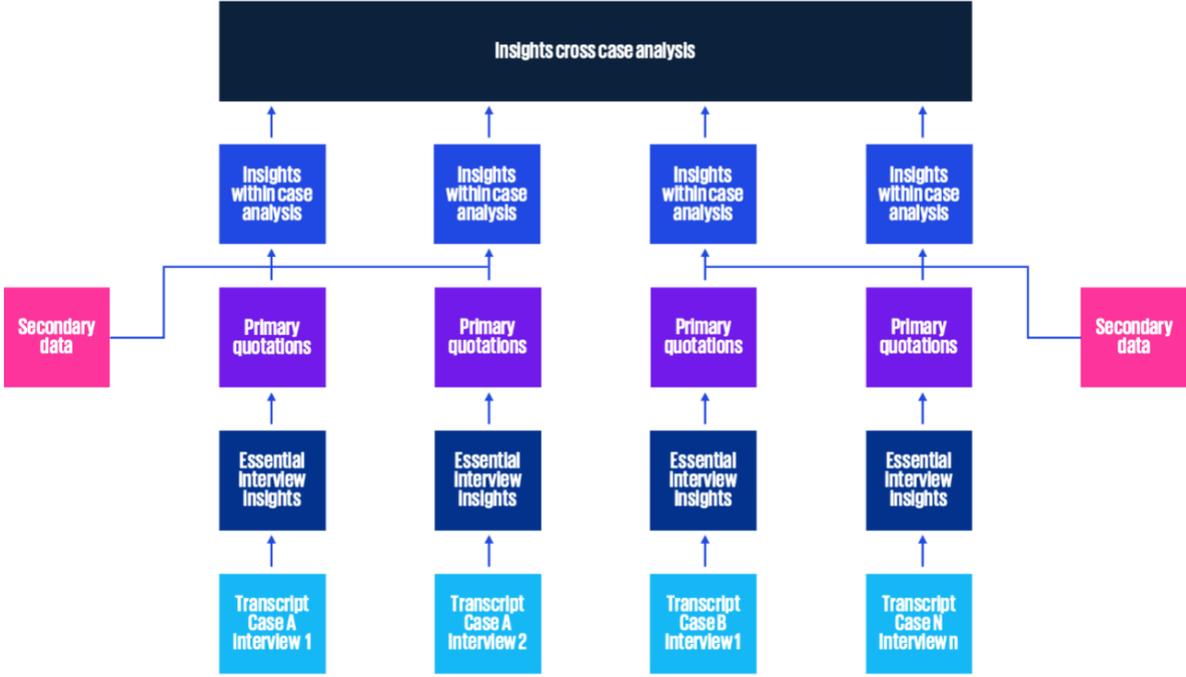
The expert interviews with each company's representatives lasted between 60 and 75 minutes. The identities of the companies, the positions held by the persons, and their time within the organizations must be anonymized in line with the participants' desires and the current corporate regulations. The collaborating experts' choices for this anonymization procedure are being followed, and this has been carefully acknowledged and appreciated.

Secondary data sources were: Annual reports, Industry reports, Business News and Publications, Company Websites, and Investor Relations, as well as the Company LinkedIn Profiles. Secondary data were used to triangulate the information collected in interviews. As Yin suggested, the triangulation of data sources is a valuable strategy for enhancing case study research's dependability (Yin, 2018, p. 119). It is possible to establish convergence of evidence by combining data from various sources, leading to conclusions supported by all three sources (Yin, 2018, p. 121). This is consistent with Yin's (2018) suggested method for conducting case studies, highlighting the value of utilizing various data sources to improve the study's validity and reliability.

Saldanha et al.'s (2013) coding method was used to transcribe and code the qualitative interviews for this study. The coding procedure ensured that the data were thoroughly and consistently examined concerning the theoretical concepts. A cross-case study followed Yin's (2018) guidelines to examine the data and reveal similarities and variations in the digital transformation process and business model innovation across the case firms. This method improved the validity of the findings by enabling the identification of trends, themes, and causal links. Microsoft Teams was used to conduct the interviews remotely, and before analysis, the data were translated from German into English and anonymized. The business model (BM) approach put forward by Christensen et al. (2016) and Teece (2010) served as the foundation for the interview guide for this cross-case research, which also used Amit and Zott's (2012)

framework for a more detailed classification. The study sought to ensure methodological rigor and elevate the status of the case study research by utilizing well-established frameworks and models, such as those suggested by recent literature, such as Hänninen et al. (2017), Verhoef et al. (2015), Brynjolfsson & McAfee (2017), and Dwivedi et al. (2020). A digital mastery self-assessment method suggested by Kraus et al. (2021) was also applied for a complete comparison. For comparison purposes, the results of systematic literature reviews on business model innovation in the context of digital transformation by Vaska et al. (2021) and successful innovation in the retail sector by Derqui et al. (2022) were also included. With these tools and the use of pre-existing frameworks and studies, a robust research foundation was created for the study, allowing for the collection and analysis of pertinent data while maintaining methodological rigor and delivering accurate results.

**Figure 9: Scheme of Analysis and Data Coding**



Source: own work based on Saldana (2013)

**4.2. Study Findings**

The analysis section comprises the within-case analysis and the following comparative cross-case analysis. A coding table was used to make it easier to translate interview transcripts into codes, and its complete application is shown in the appendix. The interview summaries are classified at level one.

#### **4.2.1. Within Case Analysis**

To enhance understanding, the structure of the chapter is aligned with the four research questions previously mentioned. The significant points from the interviews for each case will be summarized as part of the within-case analysis, incorporating expert opinions on each subject area. In order to ensure anonymity, the companies will be referred to as "Company A" and "Company B" throughout.

##### **Case Company A**

###### ***The motives for conducting digital transformation***

The necessity to meet changing consumer needs and maintain competitiveness in the digital era are the driving forces behind Company A's digital transformation. The company, which caters to various consumer groups, is adopting digital technology to improve client experiences through online operations and multiple branch formats. Customers' expectations are met by emphasizing high-quality, fresh products and sustainability activities show a commitment to environmental responsibility. Additionally, digital transformation helps Company A to expand internationally, stimulate innovation, make data-driven choices, and improve operations. The organization works to remain ahead of the curve and set itself up for success in the digital era by investing in business procedures, technology, and data analysis.

*“Our company has effectively created a global footprint by entering various European countries as part of our strategic growth. With this worldwide growth, we can access new markets, expand our client base, and use our experience to positively influence the world. We take great pride in being a reputable brand not only in Germany but also in other European nations, where we continue to provide our esteemed clients first-rate goods and services.”*  
(Interviewee A1, 2023, p.1)

###### ***Determinants of business model innovation structure***

From the perspective of Company A, their effective use of digital technologies and strategic alliances are the determinants of the business model innovation structure. The organization has changed how it approaches personalized suggestions and assortment designs by utilizing digital technologies like data analysis and artificial intelligence, enhancing consumer happiness and income. They use an agile approach to business model innovation, which enables them to make rapid changes to match changing customer demands and find new income sources. Investments

further improve the experience of online and offline purchases in a cohesive e-commerce ecosystem. Company A employs a flexible mentality to develop new business models that correspond with changing customer needs and market trends after realizing the influence of the digital revolution. Their consumer base has grown because of the ease of internet shopping, and their emphasis on sustainability and locally made items display a dedication to environmental responsibility. These factors put Company A in the position of being a progressive company that embraces digital transformation to spur development and satisfy changing consumer demands.

*“In the middle of the digital revolution, we use a variety of methods to innovate business models, allowing us to adjust to market developments and achieve a competitive advantage. We stay flexible and responsive to changing consumer requirements and industry trends by investigating new tactics, company models, and income streams.” (Interviewee A2, 2023, p.4)*

### ***Facilitating and hindering factors of digital transformation***

The numerous and significant enabling elements of Company A's digital transformation. Using digital technology has dramatically increased productivity and improved customers' shopping experiences. The organization has been able to innovate and adjust to changing client expectations in the digital age thanks to partnerships with start-ups and pioneers in the IT field. The process of developing personalized suggestions and assortment designs has changed due to artificial intelligence and data analysis, which has raised customer satisfaction and revenue. With its agile approach to business model innovation, Company A can quickly adapt to shifting customer expectations and find new revenue streams. Investments in a well-integrated e-commerce ecosystem help to enhance both online and physical shopping. The ease of internet shopping has favorably impacted customer behavior and increased the clientele for the business. Individualized rewards provided by digital loyalty programs increase customer loyalty and enhance the shopping experience. In addition, Company A strongly focuses on locally made goods and sustainability, which aligns with customer demand for such products and catalyzes their digital transformation.

However, throughout the digital revolution, there may also be impediments. These might involve the requirement for substantial expenditures in technological infrastructure, which could provide financial difficulties. Implementing new digital processes and tactics may be hampered by organizational resistance to change. A crucial topic that needs constant attention and resources is ensuring data privacy and cybersecurity. Additionally, evaluating and adapting

as industry trends and technology advance continuously is essential. Despite these obstacles, Company A's dedication to digital transformation and enabling elements allow them to surmount difficulties and promote effective business model innovation.

*“In the quickly developing market for digital solutions, I think it is difficult for enterprises to choose the best options that are in line with their unique objectives and scalability. To guarantee the best decisions are made given the market's rapid change, rigorous analysis and decision-making are necessary.” (Interviewee A1, 2023, p.3)*

### ***Individual and organizational consequences of digital transformation driving business model innovation***

The effects of digital transformation driving business model innovation for Company A on individuals and organizations are considerable and extensive. Company A can maintain its position as a leader in the industry and transform its business model by strategically using digital technologies. Online shopping and delivery options have altered the customer experience and offered practical buying options. Digital technology has increased productivity and enhanced the efficiency of physical retail processes, such as self-checkout kiosks and digital price displays. Company A can provide personalized recommendations and optimize product line design thanks to artificial intelligence and data analysis, which boosts customer happiness and revenue. Innovative solutions and new business opportunities have resulted from collaboration with IT startups and large corporations. Customer satisfaction, moral business practices, and patronizing locally produced goods are all priorities for Company A. The company has been able to stand out from rivals and create closer relationships with customers because of business model innovation. Monitoring technology advancements and modifying the business strategy to handle new obstacles is essential for continued success. The opportunity to shop online and receive quick home delivery has revolutionized consumer behavior, increasing Company A's market share and attracting more customers. Digital customer loyalty programs boost consumer loyalty and give a tailored purchasing experience since they are powered by data analysis and customized offers.

Additionally, Company A's innovative business model strongly emphasizes sustainability and locally produced goods, demonstrating a dedication to promoting eco-friendly alternatives, assisting local communities, and satisfying the rising demand for environmentally and morally responsible goods. Overall, greater productivity, improved customer experiences, creativity via

cooperation, and a strong focus on customer happiness and sustainability are characteristics of the personal and organizational effects of digital transformation for Company A.

*“Adaptation is essential to maintaining our success. We keep a close eye on technology advancements and proactively modify our business strategy to take advantage of fresh possibilities and difficulties. In a company environment that is quickly evolving, we make sure to stay relevant by staying ahead of the curve and always improving.” (Interviewee A2, 2023, p.6)*

## **Case Company B:**

### ***The motives for conducting digital transformation***

Several causes have driven Company B to start its digital transformation. Their goals include strengthening their position within the German food distribution system through organic and strategic expansion while preserving established business practices and supporting independent merchant cooperative models. By investing in production facilities, private label branding, and vertical integration, they want to lessen their dependency on outside suppliers. Additional factors include market diversification through specialized retail formats, a focus on sustainability, bettering consumer behavior and the shopping experience, entering new markets, and proactive supply chain management. Self-checkout, RFID, and AI technology integration allow operational effectiveness, seamless logistics, and a customer-centric strategy. In the end, digital transformation equips Company B to adjust, maintain competitiveness, and seize new possibilities in a business environment that is continually changing.

*“The physical point of sale continues to be the absolute core of our business. Most optimizations and improvements are currently centered around enhancing the shopping experience and customer behavior.” (Interviewee B1, 2023, p.2)*

### ***Determinants of business model innovation structure***

Company B's decentralized digital transformation strategy and emphasis on network-wide activities are the critical factors of its business model innovation structure. Instead of implementing a centralized national policy, they prioritize regionalism, customizing digitalization initiatives to the distinctive characteristics of each area. Instead of depending on a national online store, independent stores use an online store built by the digital unit. Regionally specific initiatives are implemented to address local issues and improve

competitiveness. Through a specialized innovation team, the digital unit works with startups and well-established IT companies to monitor market changes and perform worldwide assessments. Agile software development and training initiatives improve the digital unit's overall health. A 24-hour Security Operations Center ensures real-time monitoring and reaction to hacker attacks and irregularities. The German government and related entities' IT security assessment enhances crisis resilience. Company B encourages innovation by bridging the information gap between local merchants' consumer contacts and the main level's understanding of customer behavior, even if being a cooperative restricts freedom in investigating opportunities and risks outside of Germany. For the firm to innovate and expand, it is crucial to have a customer-centric emphasis.

*“Our philosophy is rooted in regionalism, and the company does not believe in a 'one size fits all' approach within our network in Germany. Each region has its own unique characteristics and digitalization initiatives.” (Interviewee B1, 2023, p.4)*

### ***Facilitating and hindering factors of digital transformation***

For Company B, the environment of digital transformation's facilitating and impeding variables is distinct. German customers' desire for cash transactions and data privacy must be overcome, a significant barrier that calls for a mentality change to spur digital innovation. The use of consumer insights is hampered by the restricted availability of customer data at the point of sale, which affects our capacity to offer individualized solutions and better couponing. Digital innovation is fueled by taking risks and encouraging original ideas inside the corporate network. However, businesses embrace digital technology at different rates depending on circumstances. Major food producers and merchants prioritize security and resilience, highlighting the necessity to safeguard infrastructure.

Nevertheless, relying on outside consultants prevents knowledge absorption, highlighting how crucial it is to build internal digitalization competency. Although the cooperative character of the digital unit has operational benefits, the need for stakeholder consensus can inhibit creativity. Innovation and alignment are hampered by the company network's lack of a consistent IT strategy. To completely comprehend consumer preferences, targeted, data-driven strategies are necessary. Things like compensation levels and regional agreements influence self-checkouts and other investment decisions. Implementing a seamless digital transition is difficult due to the complicated system architecture and different methods. Despite these

barriers, Company B understands how important it is to overcome them and use enabling conditions to promote effective digital transformation.

*“Our digital unit structure as a cooperative within the company sets us apart and allows us to excel in procurement and processes. However, it can hinder innovation implementation and speed due to the need for consensus and alignment among various stakeholders and strategies within the whole network.” (Interviewee B2, 2023, p.3)*

### ***Individual and organizational consequences of digital transformation driving business model innovation***

The effects of digital transformation driving business model innovation for Company B on individuals and organizations are extensive. Innovation and quick uptake of new concepts require standardizing and documenting essential services. However, the lack of a platform architecture impedes development and prolongs reliance on the existing economic model. Flexible budgeting and a designated risk capital fund allow access to cash for concept testing to overcome these obstacles quickly. All workers are encouraged to share their ideas and actively engage in digital transformation by fostering a culture of openness and inclusiveness. A venture capital mindset entails actively assisting retailers in their growth and expansion initiatives. Utilizing current processes and data offers a chance to start the business and increase resource effectiveness. The company's digital transformation depends on the digital division, which requires awareness and participation. To capitalize on the company's expertise and leadership in the sector, it is imperative to enhance connections and communication among digital specialists at all levels. Despite obstacles brought on by German customers' preference for traditional payment methods, cash transactions, and data privacy, efforts must be taken to overcome the restricted availability of customer data and effectively use consumer insights for tailored solutions and enhanced couponing. Digital innovation is fueled by embracing risk and promoting creative ideas inside the corporate network, as each organization utilizes digital technology in a distinct, non-traditional manner based on its circumstances. Although big food producers and merchants regard security and resilience as vital infrastructure, internalizing external expertise is challenging due to the reliance on external consultants. To solve this problem, building internal digitalization expertise becomes a major priority. The digital unit's cooperative structure provides operational benefits but necessitates stakeholder agreement, which might stifle originality. The absence of a consistent IT strategy further hampers innovation and alignment inside the company network. Targeted, data-driven strategies are

necessary for a complete understanding of customer preferences. The decision to invest money in technology like self-checkouts depends on various things, including salary levels and regional agreements. Implementing a seamless digital transition is difficult because of the intricate system architecture and numerous procedures. Despite these difficulties, Company B understands how crucial it is to successfully manage these effects and embrace digital transformation to successfully promote business model innovation.

*“We should aim for our digital unit to become the digital experts for the entire company network, participating in the architecture for digital transformation. It is not enough to have this strategy written on a slide; we must truly commit to it. By allocating resources and collaborating with both regional entities and the central organization, we can drive meaningful transformations.” (Interviewee B2, 2023, p.6)*

#### **4.2.2. Cross-Case Analysis**

According to the case study's concept, this cross-case analysis explores the similarities and contrasts between two particular companies. Although the desired distinguishing criteria were the original emphasis, other differences were apparent as individual instances were studied. The following section will elaborate on these findings. The summary of the first-order codes from the interviews performed for each example is shown in Table eight, which is provided at the end of this subchapter. It is important to note that it is difficult to categorize the topics mentioned above separately due to the interconnectedness of the interview topics, which included company history, current strategy, challenges of implementing digital transformation, changes in the business model caused by digital transformation, and consequences and anticipated future developments of digital transformation. Due to the possibility of other interpretations, it is advised to interpret the categorization offered with caution. The interviewer's understanding of the respondents' gestures throughout the interview process forms the basis for the categorization.

##### *4.2.2.1 Business Model and Value Proposition*

Company B has chosen a diversification approach by extending its product line beyond singular commodities and entering the manufacture of goods like wine, apple juice, and pasta. In addition to attracting new client categories, the business wants to increase revenue and improve the shopping experience. Prioritizing regional and local items helps businesses increase consumer loyalty and differentiate themselves from rivals (Interviewees B1 & B2, 2023). By building new sites and making smart acquisitions, Company A, in contrast, prioritizes local and

Europe-wide expansion. The importance of a powerful brand position, a large selection, and high standards is highlighted (Interviewees A1 & A2, 2023). Both companies use digital technology to satisfy changing client expectations because they understand how significant digital transformation is to their strategic posture. Although Company A offers online purchasing alternatives, it prioritizes digital payment systems and data analysis for individualized offers (Interviewees A1, A2, & B2, 2023).

In contrast, Company B places a lower focus on technological innovation. Both businesses aim for supplier independence, but Company A concentrates on partnerships, supplier analysis, and artificial intelligence, while Company B emphasizes vertical and horizontal integration (Interviewees B1, A2, 2023). Both companies place a high premium on sustainability, with Company A adopting a global viewpoint and Company B stressing a regional approach (Interviewees A2 & B1, 2023). The table below compares the value propositions of the two firms (Interviews with Interviewees A and B, 2023).

**Table 7: Comparison of the Value Propositions**

<b>Value proposition</b>	<b>Company A</b>	<b>Company B</b>
<b>Price</b>	Competitive price for a wide range of goods	High product prices due to high quality
<b>Product quality</b>	Fresh and high-quality goods are prioritized	Focus on high-quality, locally sourced items
<b>Convenience</b>	Online ordering and home delivery options	A variety of products are offered in-store
<b>Loyalty Programs</b>	Provides a digital loyalty program with individualized incentives and savings	A loyalty program with benefits is provided by participating retailers
<b>Sustainability</b>	Putting a focus on decreasing food waste and encouraging sustainable agriculture	Sustainability commitment via environmentally friendly packaging and procedures

Source: Own work based on expert interviews

#### *4.2.2.2 The Motives for Conducting Digital Transformation*

Companies A and B have different reasons for undergoing digital transformation, which reflects their different business goals and ambitions. In order to meet the varied demands of its customers, Company A, a well-known retailer with a sizeable market share, has purposefully diversified its operations across several retail categories (Interviewee A1, 2023, p.1). Company A understands the significance of embracing digital transformation and maximizing technology expenditures to sustain competitiveness and market leadership. They work hard to give their clients cutting-edge solutions, boost operational efficiency, improve the customer experience, and anticipate shifting market trends (Interviewee A2, 2023, p.1). Additionally, Company A places high importance on sustainability, freshness, and customer focus. They are dedicated to comprehending client requirements, providing a variety of high-quality and fresh items, and upholding sustainable practices across their entire business (Interviewee A1, 2023, p.2).

Company B, in comparison, adopts a different strategy as they embark on their digital transformation path. Company B has concentrated on improving and securing its current business model as a firm that has expanded via mergers and acquisitions to strengthen its position in the German market (Interviewee A1, 2023, p.1). Their main goals in adopting digital transformation are to optimize corporate processes, enhance the shopping experience, and comprehend consumer behavior. They have used technology including self-checkout, customer interaction mobile applications, couponing, customer monitoring, and logistics optimization using RFID and AI (Interviewee B2, 2023, p.2). Their approach places a high priority on sustainability and tackling environmental issues. Company B is proactive in controlling raw material shortages, investing in self-reliance, and establishing alternate supply chains (Interviewees B1, B2, 2023, p.2). In order to increase cost-effectiveness and maintain strong profit margins, they also stress the value of the actual point of sale and continually improve their supply chains, cut administrative costs, and apply technological solutions (Interviewee B2, 2023, p.1).

To sum up, Company A's goals for its digital transformation are to remain competitive, meet customer needs, and improve the customer experience. In contrast, Company B aims to optimize its current business model, enhance the shopping experience, and address sustainability issues. Both businesses know how vital technological expenditures are to accomplishing their objectives. While Company B stresses efficiency development, securing their cooperative model, and adopting technological breakthroughs, Company A prioritizes

customer attention, freshness, and sustainability (Interviewees A1, A2, B1, B2, 2023). These goals direct their digital transformation strategies and influence how they acquire and apply technology strategically.

#### *4.2.2.3 Determinants of Business Model Innovation Structure*

According to Company A, integrating digital technology into on-site operations has greatly increased productivity, streamlined procedures, and optimized resource usage (Interviewee A1, 2023, p. 4). Collaboration with established companies and start-ups in the IT sector has been crucial in promoting innovation and discovering fresh business opportunities (Interviewee A1, 2023, p. 4). Individualized ideas and assortment design are now handled thanks to data analysis and artificial intelligence, enabling better product choices and recommendations (Interviewee A1, 2023, p. 5). They can quickly adjust to changing client expectations and develop new income streams thanks to agile business model innovation and consistent market research (Interviewee A1, 2023, p. 5). In order to provide a smooth purchasing experience, Company A is also investing in a robust e-commerce ecosystem that combines online and offline channels (Interviewee A1, 2023, p. 5).

Company B's approach to digital transformation is influenced by a regionalism mindset, which allows them to adjust its approaches to local problems and rivalries (Interviewee B1, 2023, p. 4). They stay current on market developments and international consumer behavior through collaboration with startups and IT giants (Interviewee B1, 2023, p. 5). A 24/7 Security Operations Center monitors and responds to real-time abnormalities because security is crucial (Interviewee B2, 2023, p. 4). Company B has effectively monetized data using a platform that gives suppliers access to online sales numbers, despite difficulties brought on by their cooperative character (Interviewee B2, 2023, p. 5). Both companies strongly emphasize using data analysis and insights to improve the customer experience and spur targeted innovations because they recognize the value of a customer-centric approach (Interviewee A1, 2023, p.5; Interviewee B2, 2023, p.5).

In conclusion, digital technologies, partnerships, data analysis, agility, and investments in e-commerce are the key drivers of Company A's business model innovation structure (Interviewee A1, 2023). On the other hand, the most important factors for Company B are regionalism, partnerships, security precautions, data monetization, and customer-centricity (Interviewees B1, 2023; B2, 2023).

#### *4.2.2.4 Facilitating and Hindering Factors of Digital Transformation*

The qualitative expert interviews highlight the driving and impeding forces behind digital transformation for Companies A and B. The significance of thorough research and decision-making in the quickly evolving digital solutions industry is one of the enabling aspects for Company A (Interviewee A1, 2023, p. 3). While tight collaboration and efficient communication across teams and departments are vital for successfully integrating new technologies, continuous training and development is stressed to provide staff with the appropriate abilities (Interviewee A1, 2023, p.3). However, there are difficulties with incorporating new technology into systems and processes; this calls for careful planning, coordination, and competence (Interviewee A2, 2023, p. 3). Successful implementation also depends on improving digital literacy, fostering a change-friendly culture, and putting in place robust security measures (Interviewee A2, 2023, p. 3).

Utilizing consumer data and being aware of preferences benefit Company B (Interviewee B1, 2023, p. 3). The conservative character of German clients, worries about data protection, and the need to overcome risk aversion present difficulties (Interviewee B1, 2023, p. 3). For example, labor contracts and geographical differences impact investment decisions (Interviewee B1, 2023, p. 4). Digital transformation is also hampered by the need to internalize outside information, harmonize competing goals, and deal with complicated system design (Interviewee B2, 2023, p. 3–4).

Overall, the results emphasize the need for thorough analysis, training, cooperation, and communication as enabling elements, whereas integration, cultural transformation, and conventional techniques face difficulties. These observations help us comprehend the elements that affect digital transformation for both Company A and Company B (Interviewee A1, 2023, p. 3; Interviewee A2, 2023, p. 4; Interviewee B1, 2023, p. 4; Interviewee B2, 2023, p. 4).

#### *4.2.4.5 Individual and Organizational Consequences of Digital Transformation Driving Business Model Innovation*

The qualitative interviews from Company A and Company B provide insights into digital transformation's personal and organizational effects driving business model innovation. Company A can adapt to market trends, investigate new revenue prospects, and satisfy shifting customer wants thanks to the deployment of digital technology and business model innovation (Interviewee A1, 2023, p. 5). Artificial intelligence-powered tailored suggestions and self-checkout kiosks are only two examples of how integrating digital technology might boost

productivity and enhance customer shopping experiences (Interviewee A2, 2023, p. 5–6). Their innovative company plan focuses on customer pleasure, ethical business conduct, and promoting locally produced goods (Interviewee A2, 2023, p. 6).

Collaboration with IT startups and businesses fosters innovation and enhances Company A's business model (Interviewee A1, 2023, p. 6). They have stood out, fortified client connections, and fostered loyalty thanks to their commitment to business model innovation (Interviewee A1, 2023, p. 6). The business must continually change to keep current with technical developments (Interviewee A2, 2023, p. 6).

For Company B, establishing a standardized platform architecture and documenting basic services are crucial for driving innovation and shortening the time to market (Interviewee B1, 2023, p.6). However, lacking a fundamental platform architecture hinders increased costs and slower progress (Interviewee B1, 2023, p.6). Flexible budget planning processes and a dedicated fund for risk capital are necessary to support ideas' quick testing and implementation (Interviewee B1, 2023, p.6).

As thoughts and comments should be considered from all levels, Company B has a challenge in creating a culture of openness and connectedness within the corporate network (Interviewee B1, 2023, p. 6). A culture of innovation and growth is promoted by adopting a venture capital attitude and actively managing and assisting retailers as a group (Interviewee B1, 2023, p. 6). Opportunities for business model innovation are recognized in leveraging current data and procedures, encouraging connections among digital professionals, and capitalizing on the market leader position (Interviewee B2, 2023, p. 6).

In conclusion, the cross-case research shows that business model innovation fueled by digital transformation has various effects on both Company A and Company B. Improved client experiences, increased competitiveness, working with outside partners, and the requirement for connection and constant adaption are a few of these. These observations help both enterprises to understand the effects of business model innovation and digital transformation on both individuals and organizations (Interviewee A1, 2023, p. 6; Interviewee A2, 2023, p. 6; Interviewee B1, 2023, p. 6; Interviewee B2, 2023, p. 6).

**Table 8: Cross-Case Analysis Based on First-Order Codes**

Interview section	Company A	Company B
<p><b>The motives for conducting digital transformation</b></p>	<ul style="list-style-type: none"> <li>• Addressing diverse consumer demands through strong regional presence and various store formats.</li> <li>• Enhancing competitiveness through continuous investment in business processes and technology.</li> <li>• Expanding globally to establish a presence in European nations.</li> <li>• Emphasizing client attention, freshness, and sustainability as core principles.</li> <li>• Offering high-quality and fresh items to meet customer expectations.</li> <li>• Maintaining diverse branch formats, such as supermarkets, for different consumer groups.</li> <li>• Investing in online operations for convenient home delivery and in-store pickup options.</li> <li>• Prioritizing sustainability, eco-friendly practices, and social initiatives.</li> <li>• Ensuring product availability and quality through efficient sourcing and distribution.</li> <li>• Collaborating closely with partners and suppliers along the value chain.</li> <li>• Utilizing data analysis, AI, and automation to optimize operations and implement targeted marketing strategies.</li> </ul>	<ul style="list-style-type: none"> <li>○ Developing Strategic development to establish a significant food distribution network in Germany.</li> <li>○ Focus on independent merchant cooperative models while maintaining the traditional company strategy.</li> <li>○ Investments in production facilities, private label branding, and vertical integration to reduce reliance on suppliers.</li> <li>○ Horizontal growth through specialized retail formats, emphasizing niche brands and organic goods.</li> <li>○ Improved efficiency through cost savings, technology adoption, and optimized supply chain.</li> <li>○ Advertising emphasizing quality, price, and convenience for a complete shopping experience.</li> <li>○ Strong commitment to sustainability through collaboration with WWF and compliance with regulations.</li> <li>○ Emphasis on independence and alternate supply chains to address sustainability and environmental concerns.</li> <li>○ Enhancing client behavior and improving the purchasing experience.</li> <li>○ Expansion into new markets while strengthening and improving the existing business model.</li> <li>○ Integration of self-checkout, business applications, RFID, and AI technologies into the business model.</li> <li>○ Implementation of an autonomous ABC business model with defined routes and delivery methods.</li> <li>○ Exploring solutions for independence and control over supply networks, such as owning trains or ships.</li> </ul>
<p><b>Facilitating and hindering factors of digital transformation</b></p>	<ul style="list-style-type: none"> <li>• Implementation of digital technology has significantly increased productivity, streamlined processes, and enhanced customer experiences.</li> </ul>	<ul style="list-style-type: none"> <li>○ Challenges include overcoming lower technology value among German consumers and limited availability of customer data.</li> </ul>

	<ul style="list-style-type: none"> <li>• Partnerships with IT industry majors and start-ups have been crucial in driving innovation to meet evolving customer needs.</li> <li>• Data analysis and artificial intelligence have transformed personalized suggestions and assortment design, optimizing product selection and improving customer satisfaction and revenue.</li> <li>• Continuous development of business models and adaptability to changing customer demands and market trends are vital for maintaining competitiveness.</li> <li>• Online purchasing and convenient home delivery have transformed the shopping experience and expanded the customer base.</li> <li>• Digital customer loyalty programs utilizing data analysis and personalized offers help increase customer loyalty and enhance relationships.</li> <li>• Focus on sustainability, supporting local communities, and offering environmentally friendly alternatives are integral to business model innovation.</li> </ul>	<ul style="list-style-type: none"> <li>○ Digital innovation is driven by risk acceptance and encouraging original thought within the corporate network.</li> <li>○ Adoption of digital technology varies across companies due to different reasons.</li> <li>○ Security and resilience are prioritized by major food producers and retailers.</li> <li>○ Reliance on external consultants hampers internalizing digital expertise, while internal competency development is a focus.</li> <li>○ Lack of a cohesive IT strategy hinders innovation and alignment within the firm network.</li> <li>○ Targeted and data-driven techniques are necessary to understand client preferences.</li> <li>○ Investment decisions in technologies depend on factors like pay levels and regional agreements.</li> <li>○ Implementing a coherent digital transition is challenging due to complex system architecture and varied procedures.</li> </ul>
<p><b>Determinants of business model innovation structure</b></p>	<ul style="list-style-type: none"> <li>• Different Utilizing digital technology has improved productivity and enhanced the shopping experience.</li> <li>• Partnerships with IT start-ups and pioneers have fostered innovation and adaptation to changing customer expectations.</li> <li>• Data analysis and artificial intelligence have transformed personalized recommendations and assortment designs, leading to increased customer satisfaction and revenue.</li> <li>• Agile business model innovation enables quick adjustment to changing customer expectations and the discovery of new revenue sources.</li> <li>• Investments in an integrated e-commerce ecosystem enhance both online and offline purchasing experiences.</li> </ul>	<ul style="list-style-type: none"> <li>○ Digital transformation is carried out without a centralized national strategy, focusing on network-wide activities.</li> <li>○ Digitization efforts are driven by regionalism, tailoring actions to the unique qualities of each region.</li> <li>○ Independent shops utilize a digital unit-created online store instead of a national online shop.</li> <li>○ Regionally tailored actions are implemented to address challenges and enhance competitiveness.</li> <li>○ Collaboration with startups and established IT giants, along with market analysis, drives innovation.</li> <li>○ Agile software development and training programs improve the digital unit's capabilities.</li> <li>○ Real-time monitoring and response to security threats through a Security Operations Center.</li> </ul>

	<ul style="list-style-type: none"> <li>• Adapting to the digital revolution involves creating new business models and being flexible to shifting consumer demands and market trends.</li> <li>• Online buying has changed consumer behavior, expanding the customer base.</li> <li>• Digital loyalty programs drive customer loyalty and improve the shopping experience through personalized rewards.</li> <li>• Emphasizing sustainability and locally produced items aligns with consumer demand for environmentally friendly products and reduces environmental impact.</li> </ul>	<ul style="list-style-type: none"> <li>○ IT security evaluation by the German government and related agencies ensures resilience during crises.</li> <li>○ Being a cooperative limits flexibility to explore opportunities and risks outside of Germany.</li> <li>○ Suppliers can access online sales statistics and create campaigns through a partner portal.</li> <li>○ Fostering innovation requires bridging the knowledge gap between local merchants and central-level understanding of customer behavior, maintaining a customer-centric focus.</li> </ul>
<p><b>Individual and organizational consequences of digital transformation driving business model innovation</b></p>	<ul style="list-style-type: none"> <li>• Digital technology has increased productivity, improved customer experiences, and optimized product selection.</li> <li>• Partnerships with IT industry players and startups have fostered innovation and addressed evolving customer needs.</li> <li>• Data analysis and AI have transformed personalized recommendations and assortment design.</li> <li>• Adaptability to customer demands and market trends ensures competitiveness in the digital era.</li> <li>• Online shopping and delivery services have expanded the customer base and convenience.</li> <li>• Digital loyalty programs enhance customer relationships and offer personalized experiences.</li> <li>• Sustainability and local products are key focuses in business model innovation.</li> <li>• Company A has a clear plan for digital transformation and adjusts to market changes.</li> <li>• Digital tools like self-checkout and AI-driven analytics improve physical retail operations.</li> <li>• Collaboration with startups brings innovation and new business prospects.</li> </ul>	<ul style="list-style-type: none"> <li>○ Overcoming challenges in consumer preferences and limited customer data availability is crucial for successful digital innovation.</li> <li>○ Encouraging risk-taking and fostering original thinking drives digital innovation within the company.</li> <li>○ Internalizing expertise and developing digital competency internally are key focuses.</li> <li>○ Lack of a cohesive IT strategy and reliance on external consultants hamper innovation and alignment.</li> <li>○ Targeted and data-driven techniques are needed to understand customer preferences fully.</li> <li>○ Adoption of technology depends on factors like pay levels and regional agreements.</li> <li>○ Complex system architecture and varied procedures make implementing digital transition challenging.</li> <li>○ Standardization and documentation of basic services facilitate innovation and adoption.</li> <li>○ Absence of a platform architecture prolongs reliance on the established business model.</li> <li>○ Flexibility in budget planning and resource allocation enables testing of ideas.</li> </ul>

	<ul style="list-style-type: none"> <li>• Customer satisfaction and ethical practices drive business model innovation.</li> <li>• Business model innovation helps differentiate Company A and strengthen customer connections.</li> <li>• Continuous monitoring and adaptation to technological advancements ensure ongoing success.</li> </ul>	<ul style="list-style-type: none"> <li>○ Creating a culture of openness and inclusion encourages employee participation.</li> <li>○ Supporting retailers in development and expansion is important for innovation.</li> <li>○ Leveraging industry leadership requires improved connection and communication among digital professionals.</li> <li>○ Utilizing existing procedures and data maximizes resource efficiency and establishes the company.</li> <li>○ The digital division plays a crucial role in the company's digital transformation.</li> </ul>
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Source: own work

## **Chapter 5. Discussion of Research Findings**

An in-depth examination of the study findings is provided in Chapter 5 of this thesis. It examines the factors influencing business model innovation in grocery retailers, covering both internal and external determinants of the structure of BMI during the digital transformation process. The chapter further examines the facilitating and hindering elements that affect efforts for digital transformation within grocery retailers. It also addresses the implications of digital transformation on people and organizations, emphasizing how these effects will lead to the development of new business models in the retail sector.

### **5.1. Motives for Conducting Digital Transformation by Grocery Retailers**

Brynjolfsson and McAfee (2014) state that digital transformation may boost productivity, decision-making, and consumer experiences. Since both Company A and Company B stress the significance of enhancing customer experiences and operational efficiency through digital transformation projects, these motivations are consistent with the findings from the expert interviews. Similarly, Siebel (2019) stresses the disruptive nature of digital transformation and the necessity for organizations to change to survive and flourish in the digital era. This idea is consistent with Company A's motivations, which recognizes the value of adapting to market changes and looking into new revenue streams. Digital transformation is viewed as a way to maintain competitiveness in a corporate environment that is changing quickly.

In addition, Goodwin (2018) emphasizes how innovation and business model adaption are essential in digital transformation. The expert interviews with Company A. further highlight the importance of business model innovation in standing out from the competition. These results support the idea that digital transformation fosters creativity and enables businesses to rethink their business models. According to these viewpoints, Rogers (2016) offers the idea of the diffusion of innovation, highlighting the necessity for firms to adopt cutting-edge procedures and technologies to remain competitive. Company A and Company B's stated motivations reflect this viewpoint, as they understand the need to keep up with technical developments and adjust to shifting market conditions through digital transformation.

Furthermore, Kaplan and Haenlein (2019) discuss the importance of data-driven decision-making and how AI facilitates digital transformation. The expert interviewees' observations, especially those from Company A, are consistent with this viewpoint. They stress using data

analysis and artificial intelligence to deliver individualized suggestions and enhance the shopping experience.

The importance of the client in the digital transformation is also stressed by Huang and Sarigöllü (2014). This viewpoint aligns with the objectives outlined by Company A, which stresses the significance of achieving customer satisfaction and adapting to clients' shifting needs through digital transformation projects. The significance of agility and flexibility in digital transformation is also covered by Kotler et al. (2021). The results of the expert interviews support this opinion, especially in Company B. They stress the necessity of flexible budget planning procedures and the capacity to proactively alter their corporate strategy to take advantage of new possibilities and overcome obstacles. Verhoef et al. (2015) also emphasize the value of collaboration and partnerships in digital transformation. It is consistent with this viewpoint that Company A strongly focuses on working with IT startups and large enterprises to acquire novel solutions and improve their business model. Finally, Nambisan (2017) talks about how crucial it is to use already-existing tools and resources when undergoing digital transformation. The expert interviews' observations, particularly those from Company B, are consistent with this notion. They understand that as part of their attempts to undergo digital transformation, it would be possible to use their current data and processes to generate new startup chances.

Overall, the goals of the digital transformation of the grocery retail business, as determined by the expert interviews, are consistent with the knowledge gained from the pertinent literature. These reasons show how grocery retailers know the need to embrace digital transformation to remain competitive, adapt to market trends, enhance customer experiences, promote innovation and growth, and make the most of already available assets and capabilities.

## **5.2. Internal and External Determinants of the Structure of Business Model Innovation of Grocery Retailers while Undergoing Digital Transformation**

Dynamic capabilities play a significant part in influencing business model innovation, according to Amit & Zott (2012). The results of the expert interviews support this opinion, as both Company A and Company B acknowledge the need to develop internal competencies to change with the times and adapt to the digital environment. They underline the value of creating an innovation-focused culture and spending money on staff training to build a dynamic and adaptive company model. Chesbrough and Rosenbloom (2002) discuss the importance of open innovation in stimulating the development of new business models. The expert interviews

support this viewpoint, notably in Company A, which underlines the value of working with outside partners to acquire cutting-edge technologies and improve their business model. This emphasizes the part external factors play in influencing how business model innovation is structured.

According to these observations, Westerman (2014) emphasizes how vital strategic alignment is for projects, including digital transformation. According to the expert interviews, Company A and Company B realize how important it was to connect their efforts to transform their operations with their overall business plans. This illustrates how internal factors, such as strategic decision-making and goal alignment, affect the organization of business model innovation. Furthermore, The Five Trademarks of Agile Companies emphasize the significance of flexibility and agility in business model innovation (McKinsey & Company, 2019). The results of the expert interviews support this idea, as both Company A and Company B understand the value of adopting a flexible strategy to respond to shifting market dynamics and grab new possibilities. This emphasizes how factors both inside and external to the business model creation process can affect its structure.

Moreover, Foss et al. (2018) discuss how knowledge management and dynamic capabilities help develop new business models. The expert interviews' insights support this viewpoint. Company A and Company B stress the significance of utilizing to spur innovation and develop new business prospects throughout the digital transition. Additionally, Warner and Wäger (2019) stress the significance of digital ecosystem orchestration in influencing the development of new business models. According to the expert interviews, Company A and Company B understand the need to collaborate and form partnerships with external stakeholders to develop novel solutions and strengthen their business models. This illustrates how external factors affect how business model innovation is structured. Porter (2008) emphasizes how market competition shapes company models. The expert interviews support this viewpoint since both businesses recognized the need to maintain digital competitiveness.

In order to design their business model during the digital transition, they understand the significance of knowing consumer demands and preferences as well as keeping an eye on and reacting to the activities of competitors. In addition, Christensen et al. (2016) talk about disruptive innovation and how it affects business models. The expert interviews echo this viewpoint, as Company A and Company B acknowledge the potential for disruptive technology and market trends to transform the retail grocery business. They underline the importance of

changing their business strategies to deal with these changes and stay ahead of the competition. Finally, Aagaard (2019) explores how corporate culture influences the development of new business models. This opinion is supported by the expert interviews since both businesses understand the value of building a creative and entrepreneurial culture inside their firms. They emphasize the value of supporting experimentation, taking calculated risks, and adopting a growth-oriented mentality.

According to the results, internal factors influencing business model innovation significantly include dynamic capabilities, strategic alignment, agility, knowledge management, and organizational culture. External factors, such as open innovation, cooperation with outside parties, orchestration of the digital ecosystem, competitive pressures, and disruptive market dynamics, also influence the organization of business model innovation.

In conclusion, the study results show the complexity of the factors influencing the structure of business model innovation in grocery stores going through a digital transformation. The insights from the expert interviews and the pertinent literature further support this. With this thorough insight, grocery merchants can effectively traverse the digital market and develop cutting-edge, client-focused business models that give them a competitive edge.

### **5.3. Facilitating and Hindering Factors of Digital Transformation as Conducted by Grocery Retailers**

The expert interviews with Company A and Company B offer insightful information about the driving forces behind and impediments to the digital transformation of food stores, which may be further evaluated in light of the pertinent literature. The literature review includes research that provides insights into various facets of digital transformation.

Strong leadership commitment and vision are critical in guiding successful digital transformation programs, according to Yu, Xiong, and Cheng (2019). This result is consistent with Company A's observations, highlighting the importance of leadership commitment. Additionally, Cho and Kim (2019) emphasize the importance of successful change management, supporting the results from Company A about the necessity of defining clear strategic goals and putting those goals into practice. The observations from Company A regarding their engagement with IT startups and businesses are consistent with Sharma and Yadav's (2019) discussion of the value of collaboration with external partners in advancing digital transformation. Similar to how Company A recognizes the value of receiving cutting-

edge solutions from outside partners, Kesharwani and Bisht (2019) underline the requirement for access to resources and skills. De Reuver and Bouwman (2019) examine the barriers and highlight the difficulties presented by legacy systems and procedures.

This result is consistent with the notion that Company A's efforts to transition its business digitally are hampered by outdated systems. Company B's understanding of the necessity for a flexible budget planning process resonates with Accenture's (2019) emphasis on filling skill shortages and enhancing digital capabilities. The literature also highlights the need for leadership and efficient change management to advance digital transformation. Westerman et al. (2014) and Westerman, Bonnet, and McAfee (2014) highlight the relevance of these parameters, which is consistent with the findings of both Company A and Company B.

The importance of a customer-centric focus is also emphasized in "The Five Trademarks of Agile Companies" (McKinsey & Company, 2019), reinforced by the findings from both businesses emphasizing the relevance of fulfilling shifting client needs. Ponomarov and Holmström (2016) discuss the difficulties brought on by poor IT infrastructure, consistent with the barriers that both Company A and Company B highlight. In line with the observations from both firms, Aagaard (2019) underlines the necessity of addressing cultural hurdles in digital transformation. Enoche Andrade (2022) also emphasizes the value of embracing digital change, which is consistent with the overarching purpose of Company A and Company B.

In conclusion, the literature review and the Company A and B interviews show that strong leadership commitment, successful change management, collaboration with outside partners, availability of resources and capabilities, and a customer-centric focus are key factors in facilitating digital transformation. The process is hampered, however, by issues including outdated IT infrastructure, talent gaps, legacy systems, and cultural obstacles. These results highlight how crucial it is to solve these issues if the retail sector is to change digitally successfully.

#### **5.4. Individual and Organizational Consequences of Digital Transformation Driving Business Model Innovation**

The findings from the expert interviews with Company A and Company B provide light on the effects of digital transformation driving business model innovation in grocery retailers on individuals and organizations. These findings might be contrasted with the pertinent literature to grasp the subject better. Li (2018a) and Li (2019) underline enterprises' need to create new

capacities and competencies for digital transformation. These findings are supported by the interviews with Company A and Company B, which both emphasize the creation of distinct organizational units focused on digital transformation. This division may be linked to the requirement to identify and safeguard old procedures while enabling the development of a new organizational culture that welcomes digital innovation.

In their respective studies, Hopp et al. (2018) and D'aveni et al. (2010) highlight how crucial agility and flexibility are in the age of digital disruption. This is consistent with the observations made by Companies A and B, who understood the need to adapt quickly to the changing digital scene. In support of the idea of distinct units for digital transformation, Kesharwani and Bisht (2019) underline the need to develop a digital mentality and culture. Organizations may build a culture that values innovation, experimentation, and continuous learning by designating dedicated units to handle the digital transformation.

The literature on the personal effects of digital transformation has been influenced by works by Aagaard (2019) and Salahuddin et al. (2022). Salahuddin et al. (2022) investigate the potential drawbacks of business model innovation, including stakeholder resistance, cannibalization of existing products, and detrimental effects on organizational culture and identity. Aagaard (2019) discusses how digital transformation can result in job displacement and the need for upskilling. The results of the interviews with Company A and Company B align with these findings, as both of them understood how critical it was to reskill and upskill their personnel to accommodate initiatives for digital transformation. Additionally, the interviews showed that both businesses had distinct organizational divisions devoted to digital transformation.

This organizational design aims to manage both the creative aspects of digital transformation and the specific requirements of current operations. They can successfully balance the needs of current operations while promoting a culture of digital innovation by keeping these groups distinct. The necessity to safeguard existing procedures and maintain their smooth operation while simultaneously fostering an atmosphere suitable for testing novel theories and methods motivates this division. It makes it possible to create a company culture that welcomes digital change and promotes teamwork, innovation, and the investigation of novel business models. The importance of leadership commitment and top management's involvement in advancing digital transformation are stressed by Kagermann et al. (2019). This is supported by the insights gained from the interviews, as both Company A and Company B ascribed the success of their digital transformation to strong leadership commitment.

This suggests that senior management is providing essential support and direction to the organizational units focused on digital transformation, further highlighting the significance of leadership in launching and maintaining digital transformation efforts. Additionally, Foss et al. (2018) discuss how businesses must use their current assets and skills while they undergo digital transformation. This is consistent with Company A's observations, which saw the possibility of employing their current data and procedures to develop new startup prospects. As both businesses desire to enhance customer experiences through digital transformation projects, Edvardsson et al. (2019) underline the significance of customer-centricity in driving business model innovation. Also emphasized by Westerman, Bonnet, and McAfee (2014) is the necessity of organizational agility and the capacity to balance both old and new processes during the digital transition.

This viewpoint is supported by the interviews with Company A and Company B, which emphasize how effective management of old and new processes is made possible by separating organizational units for digital transformation. By keeping them apart, the businesses can ensure that the current operations continue functioning smoothly while freeing up the specialized section to investigate cutting-edge business models and advance digital transformation projects. This division helps the digital transformation unit create a unique organizational culture for promoting innovation, risk-taking, and ongoing learning.

As a result, a thorough understanding of digital transformation's personal and organizational effects on grocery retailers is provided by the information gleaned from the expert interviews with Company A and Company B and the literature on digital transformation and business model innovation. The firms' acknowledgment of the need to balance legacy procedures and digital transformation's creative needs is reflected in the creation of distinct organizational units. This separation allows them to safeguard current operations while building a culture that welcomes digital innovation.

The literature also highlights the significance of building a digital mindset, reskilling and upskilling the workforce, and displaying strong leadership commitment to drive digital transformation projects. The results from the interviews and the literature are combined to provide insights into how grocery retailers organize internal digital transformation, the benefits of separate units, and the significance of aligning organizational culture with the goals of digital transformation and business model innovation. These findings have applications for businesses starting their digital transformation journeys in grocery retail and beyond.

## Conclusions

This multi-case study investigated the connection between business model innovation and digital transformation in the German retail sector. In order to drive business model innovation, the research set out to investigate the motivations, drivers, enabling and hindering factors, as well as the effects of digital transformation on individuals and organizations. By analyzing two well-known retail chains in Germany, valuable insights were gained into the impact of digital transformation on business model innovation.

The results show how much the digital revolution has influenced the creation of new business models in the retail sector. Standardizing and codifying basic services is essential to promote innovation and speed up deployment. Digital endeavors, however, might be hampered by the lack of a fundamental platform design, increasing costs and delaying development. Retail businesses must therefore make investments in solid and adaptable platform infrastructures. Additionally, budget planning procedures should consider the pace at which innovation is required, and creating a specific risk capital fund can provide easy access to resources for concept testing and development.

Collaboration and connection inside firms are essential for effective digital transformation. Retail companies' digital divisions should lead transformation initiatives, working with regional departments as subject matter experts. Utilizing current information and procedures, like those used in purchasing and logistics, may create value and open up new possibilities. Understanding consumer behavior and preferences is crucial for fostering innovation in business models. Thus it is vital to break through silos and embrace a customer-centric mindset. The client experience is further improved by cutting-edge technology like artificial intelligence and data analysis, allowing individualized product suggestions and a more comprehensive range of options.

In conclusion, this study offers an essential new understanding of the complex relationship between digital transformation and business model innovation in Germany's retail sector. It emphasizes the need for retail businesses to adjust and take advantage of the opportunities digital transformation provides. The study offers valuable recommendations for retail companies looking to successfully navigate the digital landscape and foster innovation in their business models. It also advances our understanding of the dynamic interaction between digital transformation and business model innovation in the retail sector.

## **Limitations**

The limits of this thesis must be acknowledged, even if it has offered insightful information about the connection between digital transformation and business model innovation in the German retail sector. First, the study only looked at a narrow group of retail businesses, which means it might not have adequately captured the complexity and variety of the overall sector. Care should be used to avoid generalizing the findings to all German retail businesses.

Second, the research's qualitative character, which depends on in-depth interviews, introduces subjectivity and potential bias in the data interpretation. The opinions and experiences of the company executives who were interviewed may not entirely reflect those of all parties involved in the retail industry's efforts to innovate its business models and undergo digital transformation. The survey was also completed in a specific period. Because technology and business settings are constantly changing, the results could not accurately reflect the most recent advancements in the industry. A deeper insight might be gained by longitudinal studies that reflect the dynamic nature of business model innovation and digital transformation.

Furthermore, the research may have ignored the opinions of other significant stakeholders, like customers, suppliers, and regulators, by concentrating mainly on the viewpoints of retail enterprises. Future studies should consider the crucial roles of these stakeholders in influencing digital transformation and business model innovation in the retail sector.

In conclusion, even though this thesis offers insightful information on how the German retail sector is undergoing digital transformation and introducing new business models, it is essential to acknowledge its limits.

## **Future research**

Future studies should concentrate on longitudinal studies, quantitative analysis, and comparative studies across regions and include the viewpoints of numerous stakeholders in digital transformation and business model innovation in the retail industry. These study areas would shed light on the long-term implications, financial results, contextual considerations, and best practices associated with digital transformation. By focusing on these topics, researchers may increase their knowledge and offer helpful advice for retail firms managing digital transformation.

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## Appendix

Interview protocol and coding table



### **Interviewleitfaden Expertengespräch/ *Interview guide expert discussion***

zur empirischen Studie im Rahmen der Masterarbeit mit Titel/  
*on the empirical study within the scope of the master thesis with title*

**„Digitale Transformation und Geschäftsmodellinnovation: Eine multiple  
Fallstudie von Einzelhandelsketten in Deutschland ”**

***„Digital transformation and business model innovation: A multiple case study of retail chains  
in Germany”***

**Von/ by Denis Zolinski**

im Fachbereich (internationales) Management/ *in the field of (international) management*

an den Universitäten Católica Lissabon und Kozminski Universität Warschau/  
*at the universities Católica Lisbon and Kozminski University Warsaw*

unter der Betreuung von/ *under the supervision of*

PhD Piotr Wójcik

**Forschungsziel:** Verständnis für den Zusammenhang zwischen digitaler Transformation und Geschäftsmodellinnovation im deutschen Einzelhandel durch die Betrachtung von Praxisbeispielen und die Auswertung der Erfahrungen dieser Handelsketten.

**Research objective:** *To acquire understanding of the link between digital transformation and business model innovation in the German retail setting by looking at real-world examples and assessing the experiences of these retail chains.*

Anmerkungen:

- Vertraulichkeit: Alle Gespräche mit Experten werden vertraulich behandelt. Weder Firmen- noch Expertennamen werden genannt. Zur Kategorisierung des Unternehmens werden lediglich bestimmte Kriterien wie Alter, Größe, Standort in Deutschland und ausgewählte Industrien verwendet.
- Art des Interviews: Das Expertengespräch ist ein halbstrukturiertes Interview und Teil der explorativen Forschung im Rahmen einer Masterarbeit.
- Aufzeichnung und Transkription: Um eine detaillierte Analyse zu ermöglichen, wird das Gespräch aufgezeichnet und anschließend transkribiert. Die Transkription muss ins Englische übersetzt werden, um in die Arbeit einbezogen werden zu können. Der Experte hat die Möglichkeit, eine Kopie der Transkription und Übersetzung zur Bestätigung zu erhalten.

Notes:

- *Confidentiality: All discussions with experts are treated confidentially. Neither company nor expert names are mentioned. Only certain criteria such as age, size, location in Germany and selected industries are used to categorize the company.*
- *Type of interview: The expert interview is a semi-structured interview and part of explorative research in the context of a Master's thesis.*
- *Recording and transcription: To enable a detailed analysis, the interview will be recorded and then transcribed. The transcription has to be translated into English to be included in the thesis. The expert can receive a copy of the transcription and translation for confirmation.*

**Leitfragen für das Gespräch:**

Bereich	Fragen
<b>Überblick über die Unternehmensgeschichte</b>	<ul style="list-style-type: none"> <li>○ Können Sie bitte einen kurzen Überblick über die Geschichte Ihres Unternehmens geben, einschließlich seiner Gründung, seines Wachstums und seiner wichtigsten Meilensteine?</li> <li>○ Wie hat sich Ihr Unternehmen im Laufe der Zeit als Reaktion auf Veränderungen im Geschäftsumfeld entwickelt?</li> <li>○ Welches sind die wichtigsten Erfolgsfaktoren, die Ihr Unternehmen in die Lage versetzt haben, seine derzeitige Position zu erreichen?</li> <li>○ Welches sind die wichtigsten Trends in der Branche, die sich auf Ihr Unternehmen ausgewirkt haben, und wie hat es auf sie reagiert?</li> </ul>
<b>Derzeitige Strategie und Geschäftsmodell:</b>	<ul style="list-style-type: none"> <li>○ Können Sie Ihr derzeitiges Geschäftsmodell beschreiben und wie es für Ihre Kunden und Stakeholder einen Mehrwert schafft? (Amit &amp; Zott 2012) <ul style="list-style-type: none"> <li>• Welches Wertversprechen möchte das Unternehmen anbieten?</li> <li>• Wer sind die Kunden, die das Unternehmen ansprechen möchte?</li> <li>• Wie sieht die Architektur des Wertschöpfungsnetzwerks aus, welches das Unternehmen schaffen möchte?</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• Welches sind die entscheidenden Rollen und Verantwortlichkeiten der Akteure im Wertschöpfungsnetz?</li> <li>• Welches sind die entscheidenden Fähigkeiten, die für die Umsetzung des Wertversprechens erforderlich sind?</li> <li>• Wie schöpft das Unternehmen den Wert des Wertangebots aus?</li> </ul> <ul style="list-style-type: none"> <li>○ Was sind die Kernkompetenzen Ihres Unternehmens, die den Erfolg Ihres Geschäftsmodells ermöglichen?</li> <li>○ Können Sie die wichtigsten Faktoren für Ihr aktuelles Geschäftsmodell erläutern?</li> <li>○ Wie hat sich Ihr Unternehmen in den letzten Jahren an die veränderten Bedürfnisse und Präferenzen der Kunden angepasst?</li> </ul>
<p><b>Herausforderungen bei der Umsetzung von Lösungen für die digitale Transformation</b></p>	<ul style="list-style-type: none"> <li>○ Welches sind die größten Herausforderungen, mit denen Ihr Unternehmen bei der Umsetzung von Lösungen für die digitale Transformation konfrontiert war, und wie wurden sie bewältigt?</li> <li>○ Wie beziehen Sie Stakeholder (z. B. Kunden, Mitarbeiter, Partner) in die Bemühungen Ihres Unternehmens um digitale Transformation und Geschäftsmodellinnovation ein?</li> <li>○ Wie sieht Ihr Entwicklungsplan für die digitale Transformation aus und wie bewerten Sie ihn im Vergleich zu Ihren Wettbewerbern?</li> <li>○ Was sind einige gemeinsame Herausforderungen, mit denen FMCG-Unternehmen bei der Implementierung von Lösungen für die digitale Transformation konfrontiert sind, und wie unterscheiden sie sich zwischen den Unternehmen?</li> <li>○ Wie messen Sie den Erfolg Ihrer Initiativen zur digitalen Transformation?</li> <li>○ Wie stellen Sie sicher, dass Ihre Mitarbeiter auf die Arbeit mit neuen digitalen Technologien vorbereitet und ausgerüstet sind?</li> <li>○ Welche Maßnahmen hat Ihr Unternehmen ergriffen, um Kundendaten zu schützen und die Cybersicherheit im Rahmen der digitalen Transformation zu gewährleisten?</li> </ul>
<p><b>Geschäftsmodellinnovation im Kontext der digitalen Transformation</b></p>	<ul style="list-style-type: none"> <li>○ Wie hat sich das Geschäftsmodell Ihres Unternehmens durch die digitale Transformation verändert, und welche neuen Einnahmequellen oder Wertversprechen wurden geschaffen? <ul style="list-style-type: none"> <li>• Welches Wertversprechen will das Unternehmen anbieten?</li> <li>• Wer sind die Kunden, die das Unternehmen ansprechen möchte?</li> <li>• Wie sieht die Architektur des Wertschöpfungsnetzwerks aus, welches das Unternehmen schaffen möchte?</li> <li>• Welches sind die entscheidenden Rollen und Verantwortlichkeiten der Akteure im Wertschöpfungsnetz?</li> <li>• Welches sind die entscheidenden Fähigkeiten, die für die Umsetzung des Wertversprechens erforderlich sind?</li> <li>• Wie schöpft das Unternehmen den Wert des Wertangebots aus?</li> </ul> </li> <li>○ Können Sie den Prozess der Geschäftsmodellinnovation in Ihrem Unternehmen beschreiben?</li> <li>○ Welche Faktoren beeinflussen den Erfolg der Geschäftsmodellinnovation im Kontext der digitalen Transformation, und wie wurden sie in den Projekten Ihres Unternehmens berücksichtigt?</li> <li>○ Wie kann die digitale Transformation Geschäftsmodellinnovation ermöglichen und wie unterscheidet sich dies bei FMCG-Unternehmen?</li> <li>○ Warum unterscheiden sich Ihrer Meinung nach die Geschäftsmodellinnovationen von FMCG-Unternehmen bei der Umsetzung von Lösungen zur digitalen Transformation?</li> <li>○ Können Sie Beispiele für erfolgreiche Geschäftsmodellinnovationen in Ihrem Unternehmen oder Ihrer Branche nennen?</li> </ul>

<b>Schlussfolgerungen</b>	<ul style="list-style-type: none"> <li>○ Was sind Ihrer Meinung nach die wichtigsten Erkenntnisse für FMCG-Unternehmen, die Lösungen für die digitale Transformation implementieren und ihr Geschäftsmodell erneuern wollen, basierend auf den Diskussionen, die wir heute geführt haben ?</li> <li>○ Wie schätzen Sie die weitere Entwicklung des Geschäftsmodells ein? Welche Auswirkungen erwarten Sie für die Zukunft?</li> <li>○ Welche Rolle spielen Ihrer Meinung nach digitale Technologien für die Zukunft Ihres Geschäftsmodells?</li> <li>○ Wo sehen Sie die zentralen Herausforderungen und Chancen für Ihr Unternehmen in der Zukunft?</li> <li>○ Wie würden Sie sich selbst im Vergleich zu den Wettbewerbern im Hinblick auf die digitale Transformation einschätzen?</li> <li>○ Gibt es noch etwas, das Sie zu diesem Thema hinzufügen oder weiter diskutieren möchten?</li> </ul>
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### Guiding questions for the interview:

Topic	Questions
<b>Overview of the company history</b>	<ul style="list-style-type: none"> <li>○ Please briefly overview your company's history, including its foundation, growth, and critical milestones.</li> <li>○ How has your company evolved in response to changes in the business environment?</li> <li>○ What critical success factors have enabled your company to reach its current position?</li> <li>○ What are the key trends in the industry that have impacted your company, and how has it responded to them?</li> </ul>
<b>Current strategy and business model:</b>	<ul style="list-style-type: none"> <li>○ Can you describe your current business model and how it adds value for your customers and stakeholders? (Amit &amp; Zott 2012) <ul style="list-style-type: none"> <li>- What value proposition does the company want to offer?</li> <li>- Who are the customers the company wants to address?</li> <li>- What is the architecture of the value network the company wants to create?</li> <li>- What are the critical roles and responsibilities of the actors in the value network?</li> <li>- What are the critical capabilities required to deliver the value proposition?</li> <li>- How does the company exploit the value of the value proposition?</li> </ul> </li> <li>○ What are your company's core competencies that enable your business model's success?</li> <li>○ Can you explain the key drivers of your current business model?</li> <li>○ How has your company adapted to changing customer needs and preferences recently?</li> </ul>
<b>Challenges in implementing solutions for digital transformation</b>	<ul style="list-style-type: none"> <li>○ What are the biggest challenges your company has faced in implementing digital transformation solutions and how were they overcome?</li> <li>○ How do you involve stakeholders (e.g., customers, employees, partners) in your company's digital transformation and business model innovation efforts?</li> <li>○ What is your development plan for digital transformation, and how do you rate it compared to your competitors?</li> <li>○ What are some common challenges FMCG companies face when implementing digital transformation solutions, and how do they differ between companies?</li> <li>○ How do you measure the success of your digital transformation initiatives?</li> <li>○ How do you ensure that your employees are prepared and equipped to work with new digital technologies?</li> </ul>

	<ul style="list-style-type: none"> <li>○ What measures has your company taken to protect customer data and ensure cyber security in the context of digital transformation?</li> </ul>
<p><b>innovation in the context of digital transformation</b></p>	<ul style="list-style-type: none"> <li>○ How has digital transformation changed your company's business model and what new revenue streams or value propositions have been created? <ul style="list-style-type: none"> <li>- What value proposition does the company want to offer?</li> <li>- Who are the customers the company wants to address?</li> <li>- What is the architecture of the value network the company wants to create?</li> <li>- What are the critical roles and responsibilities of the actors in the value network?</li> <li>- What are the critical capabilities required to deliver the value proposition?</li> <li>- How does the company exploit the value of the value proposition?</li> </ul> </li> <li>○ Can you describe the process of business model innovation in your company?</li> <li>○ What factors influence the success of business model innovation in the context of digital transformation and how have they been taken into account in your company's projects?</li> <li>○ How can digital transformation enable business model innovation and how does this differ for FMCG companies?</li> <li>○ Why do you think business model innovation differs among FMCG companies when implementing digital transformation solutions?</li> <li>○ Can you give examples of successful business model innovation in your company or industry?</li> </ul>
<p><b>Conclusion</b></p>	<ul style="list-style-type: none"> <li>○ Based on the discussions we have had today, what do you think are the key insights for FMCG companies looking to implement digital transformation solutions and innovate their business model ?</li> <li>○ How do you assess the further development of the business model? What impact do you expect in the future?</li> <li>○ What role do you think digital technologies play in the future of your business model?</li> <li>○ Where do you see the key challenges and opportunities for your company in the future?</li> <li>○ How would you rate yourself compared to competitors in terms of digital transformation?</li> <li>○ Is there anything else you would like to add or discuss further on this topic?</li> </ul>

**Table A. Within-case analysis: Company A**

Interview section	A1 – Exemplary interview codes	First-order codes – A1	A2 – Exemplary interview codes	First-order codes – A2
<p><b>Company history overview</b></p>	<ul style="list-style-type: none"> <li>▪ “As a well-known retailer with a significant market share, our business has deliberately diversified its activities throughout a number of retail segments, including supermarkets, discounters, horticultural supply shops, and travel agencies. With this broad centralized strategy, we are able to satisfy the various needs of our clients and provide them a vast array of goods and services easily under one roof.”</li> <li>▪ “The firm has grown via mergers and acquisitions to improve its position in the German market. It was founded on a basis of collaboration. We have been able to increase our competitive edge, reach new market sectors, and build our client base thanks to our strategic growth method. We have welcomed innovation, embraced synergies, and shared expertise with like-minded companies to consistently improve our offers and maintain market leadership.”</li> <li>▪ “Our company has effectively created a global footprint by entering various European countries as part of our strategic growth. With this worldwide growth, we can access new markets, expand our client base, and use our experience to positively influence the world. We take great pride in being a reputable brand not only in Germany but</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Enterprise A operates centralized in different retail areas, including supermarkets, discounters, horticultural supply stores, and travel agencies</li> <li>⇒ The firm, which was once a cooperative, developed via mergers and acquisitions to improve its position in the German market</li> <li>⇒ The company has also expanded worldwide, establishing a presence in a number of European nations.</li> </ul>	<ul style="list-style-type: none"> <li>▪ “Customer satisfaction is the cornerstone of our company's business approach. With a strong regional presence and a varied network of branches in different forms, we aim to meet the particular needs of our clients wherever they may be. We strive to offer customized solutions that address the unique tastes and needs of each community we serve, whether through our local supermarkets, value-driven discounters, specialty horticultural supply stores, or travel agencies. We are able to provide individualized experiences to our consumers because to our dedication to regional involvement.”</li> <li>▪ “The firm is dedicated to maintaining its position as a leader in the sector by making ongoing investments in technology and operational procedures. We make these expenditures to maintain our competitiveness and our ability to provide our clients with cutting-edge solutions. We improve operational effectiveness, improve the customer experience, and stay ahead of changing market trends by embracing digital transformation and utilizing cutting-edge technology.”</li> </ul>	<ul style="list-style-type: none"> <li>⇒ The firm attempts to address the various demands of its consumers by having strong regional presence and branches in various formats</li> <li>⇒ Constant investment in business processes and technology ensures that Enterprise A remains competitive and offers cutting-edge solutions to its clients.</li> </ul>

	also in other European nations, where we continue to provide our esteemed clients first-rate goods and services.”			
<b>Current strategy and business model</b>	<ul style="list-style-type: none"> <li>▪ “At our organization, we have developed three important values: customer attentiveness, freshness, and sustainability. These concepts guide our present approach. We strive to give a comprehensive and customer-centric experience by concentrating on understanding the needs and expectations of our customers, providing a variety of high-quality and fresh goods, and maintaining sustainable practices throughout our operations.”</li> <li>▪ “Our company is dedicated to understanding the needs and goals of our clients. We do this by providing a wide range of premium and freshly prepared goods. We work hard to meet and surpass customer expectations by closely observing market trends and remaining aware of their preferences. This helps to create a solid rapport based on trust and fulfillment.”</li> <li>▪ “We have built a variety of branch models, including supermarkets to appeal to various consumer groups and preserve close client proximity. With the help of this strategic approach, we can provide easy and individualized shopping experiences that are in accordance with the specific demands and preferences of various client categories.”</li> <li>▪ “We have made major expenditures in our online operation in keeping with the</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Three principles serve as the foundation of the company's current strategy: client attention, freshness, and sustainability.</li> <li>⇒ The business offers a variety of high-quality and fresh items in an effort to comprehend the demands and expectations of its customers.</li> <li>⇒ The business maintains a number of branch formats to cater to diverse consumer groups, maintaining close customer closeness.</li> <li>⇒ The company makes investments in its online operation, giving customers the</li> </ul>	<ul style="list-style-type: none"> <li>▪ “At Company A, our business model is built on sustainability. We have a strong commitment to eco-friendly methods, which includes using renewable energy sources and using less plastic. Our commitment to sustainability goes beyond our business operations as we actively participate in social activities and make charitable donations, positively influencing both society and the environment.”</li> <li>▪ “Quality and availability of the products are extremely important to us. We place a strong value on effective sourcing, shipping, and distribution to guarantee that our consumers have access to the freshest and best items. We can satisfy client expectations while upholding the highest levels of quality by simplifying these procedures.”</li> <li>▪ “The secret to our success is working together with our partners and suppliers. We cultivate solid partnerships and guarantee consistent supply by maintaining constant communication along the value chain. Through this partnership, we can find innovative ways to solve problems and spur innovation, eventually giving our consumers more for their money.”</li> <li>▪ “Automation, artificial intelligence, and data analysis are essential to our company processes. Utilizing these</li> </ul>	<ul style="list-style-type: none"> <li>⇒ The company plan places a strong emphasis on sustainability, with particular attention paid to eco-friendly activities, renewable energy sources, and a decrease in the use of plastic. Additionally, the business works on social initiatives and contributes to philanthropic causes.</li> <li>⇒ To guarantee product availability and quality, the organization places a high priority on efficient sourcing, shipping, and distribution.</li> <li>⇒ For dependable supplies and creative solutions, close communication with partners and suppliers along the value chain is necessary.</li> <li>⇒ The organization makes use of data analysis, AI, and automation to</li> </ul>

	<p>changing market trends. We acknowledge the expanding significance of digital channels and provide our customers the option when placing online orders to select between home delivery and in-store pickup. By embracing e-commerce and utilizing technology, we hope to improve convenience and provide our cherished consumers a seamless purchasing experience.”</p>	<p>choice between home delivery and in-store pickup when they order online.</p>	<p>technology helps us streamline business operations, get insightful information, and make fact-based choices. This enables us to carry out targeted marketing strategies, customize consumer interactions, and boost overall effectiveness and efficiency while continuing to lead the innovation in our sector.”</p>	<p>optimize corporate operations, put into place targeted marketing plans, and boost overall effectiveness and efficiency.</p>
<p><b>Challenges in implementing digital transformation solutions</b></p>	<ul style="list-style-type: none"> <li>▪ “In the quickly developing market for digital solutions, I think it's difficult for enterprises to choose the best options that are in line with their unique objectives and scalability. To guarantee the best decisions are made given the market's rapid change, rigorous analysis and decision-making are necessary.”</li> <li>▪ “At our firm, we understand the value of constant training and development to provide our employees the skills they need for the on-going digital transformation. By supporting their professional development, we enable our staff to adopt new technology and keep up with the times.”</li> <li>▪ “Close cooperation and excellent communication across teams and</li> </ul>	<p>⇒ It might be difficult to choose the best alternatives that correspond with organizational goals and scalability due to the market for digital solutions' quick evolution.</p> <p>⇒ Ensuring continuing training and development to provide staff members the skills they need for the digital revolution.</p> <p>⇒ It is essential for teams and departments</p>	<ul style="list-style-type: none"> <li>▪ “During the digital transformation process, integrating new technology into old systems can provide considerable hurdles. To guarantee a seamless integration that optimizes the advantages of the new technology while minimizing interruptions to old processes, rigorous planning, coordination, and skill are required.”</li> <li>▪ “Businesses must create a change-friendly culture in order to successfully implement new technology. This entails promoting an innovative mentality among employees, modifying corporate procedures to take use of digital solutions, and spending money to upgrade staff digital literacy. Organizations may successfully navigate the road of digital transformation by cultivating a digitally friendly culture.”</li> <li>▪ “Strong security measures are needed to manage the vast volume of data produced during digital transformation. Data integrity and sensitive information security must always come first. To</li> </ul>	<p>⇒ During digital transformation, integrating new technology into existing systems can be challenging.</p> <p>⇒ For new technologies to be successfully adopted, business cultures must change and digital skills must be improved.</p> <p>⇒ Strong security measures are needed to manage the enormous volume of data created during digital transformation.</p>

	<p>departments are essential for the successful integration of new technology into our business operations. We make sure that new technologies are effectively incorporated, increasing our total operational efficiency, by developing a culture of cooperation and open communication.”</p>	<p>to work closely together and communicate in order for new technologies to be integrated into current business processes in an effortless manner.</p>	<p>secure data and guarantee adherence to privacy laws, it is crucial to use cutting-edge security protocols, encryption methods, and access restrictions.”</p> <ul style="list-style-type: none"> <li>▪ “It might be difficult to combine antiquated technologies with modern digital solutions. In order to integrate historical systems with contemporary platforms, it frequently entails bridging technological gaps, resolving compatibility concerns, and coming up with creative solutions. To achieve flawless interoperability between the old and new systems, meticulous planning, thorough testing, and experience are required.”</li> </ul>	<p>⇒ Integrating outdated systems with cutting-edge digital solutions is difficult.</p>
<p><b>Business model innovation within the context of digital transformation</b></p>	<ul style="list-style-type: none"> <li>▪ “We have seen a huge increase in efficiency as a result of incorporating digital technology into our on-site activities. This has made it possible for us to simplify processes, cut down on manual work, and maximize resource usage, eventually giving our consumers a seamless and modern shopping experience.”</li> <li>▪ “Our collaborations with IT industry majors and start-ups have been crucial in fostering innovation and identifying fresh commercial prospects. By working together, we have been able to benefit from their knowledge, take advantage of their cutting-edge solutions, and co-create innovative strategies to satisfy our clients' changing demands and advance in the digital world.”</li> </ul>	<p>⇒ Utilizing digital technology has greatly improved productivity and given customers a smooth shopping experience.</p> <p>⇒ We have been able to innovate and adapt to changing customer expectations in the digital age thanks to partnerships with start-ups and pioneers in the IT sector.</p>	<ul style="list-style-type: none"> <li>▪ “In the middle of the digital revolution, we use a variety of methods to innovate business models, allowing us to adjust to market developments and achieve a competitive advantage. We stay flexible and responsive to changing consumer requirements and industry trends by investigating new tactics, company models, and income streams.”</li> <li>▪ “Online shopping and delivery services have completely changed how consumers purchase. Customers may now easily explore and buy items online with the added convenience of home delivery thanks to our efforts in digital transformation. The consumer experience has been much enhanced by this change in buying habits, and we now have a larger audience to serve.”</li> </ul>	<p>⇒ In order to adapt to the digital revolution, we create new business models while being flexible to shifting consumer demands and market trends.</p> <p>⇒ The simplicity of online buying has changed consumer behavior, increasing our client base.</p>

	<ul style="list-style-type: none"> <li>▪ “Our approach to individualized suggestions and assortment design has been transformed by the use of data analysis and artificial intelligence. By utilizing data, we may gather insightful knowledge about client preferences and behavior, allowing us to provide personalized suggestions and improve our product selection. By using data-driven strategies, we can increase customer happiness, increase revenue, and make sure the right items are delivered at the right time to the right customers.”</li> <li>▪ “We can swiftly adjust to shifting client expectations because to our agile approach to business model innovation. We uncover new trends and customer demands through routine market research and consumer feedback analysis, allowing us to create new revenue streams and offer distinctive value propositions.”</li> <li>▪ “We are making investments to create a strong e-commerce ecosystem that seamlessly combines online and physical channels as part of our digital transformation plan.”</li> </ul>	<p>⇒ Our approach to creating tailored recommendations and assortment designs has changed as a result of data analysis and artificial intelligence, which has raised consumer happiness and income.</p> <p>⇒ We can swiftly adjust to changing client expectations because to our agile approach to business model innovation, which also helps us find new income sources.</p> <p>⇒ To improve both the online and offline purchasing experiences, we are making investments in an integrated e-commerce ecosystem.</p>	<ul style="list-style-type: none"> <li>▪ “By providing specialized rewards and individualized offers, our digital customer loyalty programs are intended to promote client loyalty. We can offer a tailored shopping experience, recognize client loyalty, and strengthen our bond with our esteemed customers by utilizing data analysis and consumer insights.”</li> <li>▪ “We are putting a higher emphasis on sustainability and locally made items as part of our business model innovation. We work hard to provide environmentally friendly product alternatives because we value environmental responsibility. We help local communities, lessen our carbon footprint, and meet the rising demand for items that are ecologically and morally responsible by sourcing locally made goods.”</li> </ul>	<p>⇒ To increase consumer loyalty and improve the shopping experience, our digital loyalty programs provide individualized rewards.</p> <p>⇒ We place a high value on sustainability and locally produced items in order to lessen our impact on the environment and satisfy consumer demand for environmentally friendly goods.</p>
<b>Conclusions</b>	<ul style="list-style-type: none"> <li>▪ “Company A understands how crucial it is to maintain its competitiveness and respond to market developments. We have created a thorough plan for digitally altering our company model in order to accomplish this. This strategy enables us to take advantage of digital technology, investigate new income</li> </ul>	<p>⇒ To remain competitive and adjust to market changes, Company A has a well-defined plan for digitally altering its business model.</p>	<ul style="list-style-type: none"> <li>▪ “We have transformed our physical retail operations by integrating digital technologies, such as self-checkout kiosks and digital price displays. These developments have greatly enhanced production and improved our clients' shopping experiences.”</li> </ul>	<p>⇒ By incorporating digital technology like self-checkout kiosks and digital pricing displays, physical retail operations are now more productive and the shopping</p>

	<p>opportunities, and address the changing demands of our clients.”</p> <ul style="list-style-type: none"> <li>▪ “Online purchasing and delivery services have completely changed the game for Company A. We can offer easier purchase alternatives and satisfy client expectations thanks to this business model innovation. We have increased our reach and given our devoted clients a better overall buying experience by adopting digital media.”</li> <li>▪ “The development of new business opportunities and the advancement of innovation have both been greatly aided by collaboration with IT startups and corporations. We have been able to obtain innovative solutions that improve our business model and set us apart from the competition by collaborating with these tech-savvy firms and utilizing their experience.”</li> <li>▪ “Company A is pleased with the outcomes of our dedication to business model innovation. We have been able to distinguish ourselves from the competition and solidify our ties with clients by consistently inventing and modifying our business approach. With an innovation-focused approach, we can better serve their needs, improve their overall experience, and encourage steadfast loyalty.”</li> </ul>	<p>⇒ In order to offer easy purchase alternatives and satisfy consumer expectations, the introduction of online shopping and delivery services has been a critical business model innovation.</p> <p>⇒ Innovative solutions and fresh business prospects have resulted from collaboration with IT startups and enterprises.</p> <p>⇒ Through business model innovation, Company A has been able to stand out from the competition and establish better client connections.</p>	<ul style="list-style-type: none"> <li>▪ “We use artificial intelligence and data analysis to provide individualized suggestions and improve the layout of our product range. By utilizing these technologies, we make sure that our clients get personalized recommendations and have access to a well selected selection of products that suit their requirements and tastes.”</li> <li>▪ “Customer satisfaction is our primary focus at Company A. We also understand the significance of supporting locally produced goods and ethical business methods. As we actively prioritize satisfying consumer needs, supporting ethical corporate behavior, and promoting locally made items, our business model innovation reflects these ideals.”</li> <li>▪ “Adaptation is essential to maintaining our success. We keep a close eye on technology advancements and proactively modify our business strategy to take advantage of fresh possibilities and difficulties. In a company environment that is quickly evolving, we make sure to stay relevant by staying ahead of the curve and always improving.”</li> </ul>	<p>experience is more smooth.</p> <p>⇒ Artificial intelligence and data analysis are used to offer tailored suggestions and enhance product line design.</p> <p>⇒ Priority is given to satisfying customer requests, fostering ethical corporate conduct, and supporting locally made items.</p> <p>⇒ Monitoring technical developments and changing the company model to address new problems are necessary for ongoing success.</p>
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**Table B. Within-case analysis: Company B**

Interview section	B1 – Exemplary interview codes	First-order codes – B1	B2 – Exemplary interview codes	First-order codes – B2
<p><b>Company history overview</b></p>	<ul style="list-style-type: none"> <li>▪ “Our growth as a company has been primarily organic, driven by strategic acquisitions such as the takeover of 2,100 markets and parts of competitors. With a solid reputation and a focus on expansion, we have become one of Germany's largest food distribution networks, aiming to surpass €70 billion in revenue.”</li> <li>▪ “Our main focus remains on its cooperative model with 3,500 independent retailers. The core business model of procuring or producing goods and placing them on shelves for purchase has remained unchanged for over a century, and there seems to be no imminent change to this model.”</li> <li>▪ “We have implemented a vertical integration strategy, expanding our production capabilities to become less dependent on external suppliers. We have significantly expanded our private label brands and invested in various production facilities, including the second-largest winery in Germany, a frozen bakery production facility, mineral water production, and apple juice production across multiple locations.”</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Developing strategically and organically to become a significant German food distribution network.</li> <li>⇒ Focus on independent merchant cooperative models while keeping your traditional company strategy.</li> <li>⇒ Investments in production facilities, increasing private label branding, and vertical integration all help to lessen dependency on outside suppliers.</li> </ul>	<ul style="list-style-type: none"> <li>▪ “In addition to vertical integration, we continue to expand horizontally by developing specialty stores and concepts. These include our specialty brands such as (...) and an increasing number of bakery shops. We also prioritize the growth of our organic product offerings, both within our specialty stores and as a dedicated organic brand under (...).”</li> <li>▪ “Efficiency improvement has been a consistent focus for us. We continuously optimize our supply chains, reduce administrative overhead, and implement SAP and other programs to maximize cost-effectiveness and maintain high profit margins. Our cooperative model has led to a privatization wave, with an increasing number of stores owned by independent partners, resulting in stronger business performance.”</li> <li>▪ “We have adjusted our advertising messages to cater to customers' preferences for both quality and competitive pricing. By aligning our prices with our competitor (...), we aim to provide a one-stop shopping experience for customers, allowing them to complete their entire shopping list at our stores.”</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Horizontal growth centered on niche brands and organic goods through specialized retail formats.</li> <li>⇒ Improved efficiency brought on by cost savings, technology adoption, and supply chain optimization.</li> <li>⇒ For a complete shopping experience, advertising focuses on great quality, price, and convenience.</li> </ul>

<p><b>Current strategy and business model</b></p>	<ul style="list-style-type: none"> <li>▪ “Sustainability is a core value for us, reflected in our partnership with WWF and our commitment to sustainable practices. We extend our contract with WWF, ensuring compliance with their high standards across our supply chains, production facilities, and private label products. Our advertising messages have also evolved to emphasize our commitment to quality, affordability, and meeting customer expectations.”</li> <li>▪ “Sustainability and addressing environmental concerns are significant factors in our business strategy. We aim to be self-reliant by securing our own transportation and investing in alternative supply chains. We have even purchased raw materials, such as aluminum and hazelnuts, to ensure availability and stability in production”</li> <li>▪ “The physical point of sale continues to be the absolute core of our business. Most optimizations and improvements are currently centered around enhancing the shopping experience and customer behavior.”</li> <li>▪ “Company B is not actively questioning or developing new business models, apart from incorporating the trend of online shopping. The company has typically positioned itself as a follower rather than a leader in terms of innovation and top trends, preferring to focus on optimizing, expanding, and solidifying its existing business model.”</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Strong commitment to sustainability demonstrated by cooperation with WWF and observance of regulations in manufacturing facilities and supplier networks.</li> <li>⇒ To address sustainability and environmental problems, put an emphasis on independence and alternate supply chains.</li> <li>⇒ Improving client behavior and the purchasing experience at the actual moment of transaction.</li> <li>⇒ Company B places more emphasis on expanding into new markets than on improving its current business strategy.</li> </ul>	<ul style="list-style-type: none"> <li>▪ “The traditional business model has expanded with the addition of technologies such as self-checkout, the company App for customer engagement, couponing, customer tracking, and optimized logistics with RFID and AI technology.”</li> <li>▪ “Within the our network, a separate and differentiated business model is ABC, which operates independently from the main business model. ABC follows a milkman-like principle, delivering to customers along a fixed route at the same time on the same day. ABC’s delivery approach reduces costs for the last mile and is currently a marginal percentage of the overall revenue within our network.”</li> <li>▪ “Disrupted supply chains, as seen with the Suez Canal incident and the ongoing pandemic, have prompted many industry players to seek independence and control over their supply networks. Some food retailers are exploring options like owning trains or ships to mitigate supply chain risks.”</li> <li>▪ “Raw material scarcity is a relevant challenge, and our company is proactive in managing it. We closely monitor commodity markets and use our insights during supplier negotiations to ensure fair cost allocations and sustainable pricing structures.”</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Self-checkout, business applications, and enhanced logistics using RFID and AI are all technologies that are incorporated into the conventional business model.</li> <li>⇒ With a defined route and delivery method, the ABC business model runs autonomously.</li> <li>⇒ Industry participants are investigating solutions like owning trains or ships as they seek independence and control over supply networks due to interruptions.</li> <li>⇒ Proactive control of raw material shortages through market monitoring of commodities.</li> </ul>
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<p><b>Challenges in implementing digital transformation solutions</b></p>	<ul style="list-style-type: none"> <li>▪ “German customers, including those in the grocery retail sector, tend to be conservative when it comes to digitalization. There is a high demand for data privacy, a preference for cash payments, and a strong attachment to traditional, hands-on shopping experiences.”</li> <li>▪ “There is a need to leverage customer data for tailored solutions, such as personalized recipe suggestions and more precise couponing. The goal is to understand customers better, offer specific deals, and make better use of receipt data to improve the shopping experience. There are still significant tasks to be accomplished in utilizing customer data effectively, considering the regional variations and addressing blind spots in data collection.”</li> <li>▪ “There is a need for more courage and willingness to take risks within the company network, as digital innovation thrives on experimentation and not all initiatives will succeed. A mindset shift is necessary to embrace the possibility of failure and allocate resources towards innovative ideas.”</li> </ul>	<p>⇒ German consumers value technology less than they do cash transactions, conventional means of payment, and data privacy.</p> <p>⇒ The collection and use of consumer insights are hampered by the limited availability of customer data at the point of sale.</p> <p>⇒ To provide individualized solutions and improved couponing, it is essential to overcome challenges and utilize customer data efficiently.</p>	<ul style="list-style-type: none"> <li>▪ “One of our main challenges is ensuring that we have enough internal staff with the necessary competencies to handle different areas, as we tend to rely heavily on external expertise. It is crucial for us to internalize external knowledge and expertise to avoid dependence on external consultants. We aim to become experts in digitalization ourselves and not rely solely on external advisors.”</li> <li>▪ “Our digital unit structure as a cooperative within the company sets us apart and allows us to excel in procurement and processes. However, it can hinder innovation implementation and speed due to the need for consensus and alignment among various stakeholders and strategies within the whole network.”</li> <li>▪ “We lack a unified IT strategy in the company network, with each entity having its own agenda. This diversity requires time and effort to align different streams and reach a common ground, impacting our ability to bring innovations to market quickly.”</li> <li>▪ “It is important to avoid being self-absorbed and making assumptions about</li> </ul>	<p>⇒ Since the business significantly relies on outside consultants, internalizing external expertise is difficult. Internal digitalization competency development is a top focus.</p> <p>⇒ Although the digital unit's cooperative form provides advantages in terms of operations and procurement, creativity is hampered by the requirement for stakeholder agreement.</p> <p>⇒ Innovation and alignment are hampered by the firm network's lack of a cohesive IT strategy.</p> <p>⇒ To fully understand client preferences, targeted and data-</p>

	<ul style="list-style-type: none"> <li>▪ “The decision to invest in specific digital technologies is made individually by each retailer due to increasing privatization. Factors such as labor agreements, regional wage levels, and workforce availability influence investment decisions. Therefore, there is no single template or standardized approach.”</li> <li>▪ “Measures to enhance security and resilience are implemented by major food retailers and manufacturers in Germany due to their classification as critical infrastructure.”</li> </ul>	<p>⇒ Within the corporate network, digital innovation is driven through accepting risk and encouraging original thought.</p> <p>⇒ Based on a variety of reasons, each company adopts digital technology in a non-traditional way.</p> <p>⇒ Major food producers and retailers prioritize security and resilience as important infrastructure.</p>	<p>what customers want. Instead, a more targeted and data-driven approach is needed to understand customer needs and preferences accurately.”</p> <ul style="list-style-type: none"> <li>▪ “Some retailers prioritize maintaining jobs and opt not to implement technologies like Self Checkouts due to favorable wage levels or regional agreements. The investment decisions depend on the specific circumstances and needs of each retailer.”</li> <li>▪ “Our complex system architecture, diverse processes, and lack of standardized digitalization efforts pose challenges in implementing a cohesive digital transformation across the company network.”</li> </ul>	<p>driven techniques are required.</p> <p>⇒ The choice to invest in technology like self-checkouts by retailers depends on a variety of things, including pay levels and regional agreements.</p> <p>⇒ Implementing a coherent digital transition is difficult due to complex system architecture and varied procedures.</p>
<p><b>Business model innovation within the context of digital transformation</b></p>	<ul style="list-style-type: none"> <li>▪ “There is no nationally coordinated approach to digital transformation. Instead, we aim to shape the digital transformation by identifying initiatives that can be implemented across the entire business network. However, there is no predetermined roadmap or timeline for the implementation of specific digital technologies, such as frictionless stores or self-checkouts.”</li> <li>▪ “Our philosophy is rooted in regionalism, and the company does not believe in a 'one size fits all' approach within the our network in Germany. Each region has its own unique</li> </ul>	<p>⇒ Without a centralized national strategy, digital transformation is carried out by concentrating on network-wide activities.</p> <p>⇒ Regionalism is what drives digitization efforts, which are then tailored to the unique</p>	<ul style="list-style-type: none"> <li>▪ “All retailers with online accessible systems face daily hacker attacks and discussions on topics like implementing two-factor authentication for apps. We have established a 24/7 Security Operations Center to monitor and react to anomalies in real-time across its central and subsidiary systems.”</li> <li>▪ “The German government and relevant authorities, including the federal office of civil protection, audit our IT security to ensure resilience during crises.”</li> <li>▪ “As a cooperative, we are somewhat limited in exploring new ventures and</li> </ul>	<p>⇒ In order to track and react to hacker assaults and abnormalities in real-time, a Security Operations Center is operational around-the-clock.</p> <p>⇒ To maintain resilience during crises, the German government and related agencies evaluate IT security.</p>

	<p>characteristics and digitalization initiatives.”</p> <ul style="list-style-type: none"> <li>▪ “Our company does not have a nationwide online shop. Instead, individual retailers can request and access an online shop developed by our digital unit to establish their own ecommerce businesses, either as a reaction to competition or as preparation based on the speed at which regional retailers are adopting online strategies.”</li> <li>▪ “We responds to local challenges and competition in a region-specific manner. For example, if a competitor like YYY-Online starts encroaching on our market share in Berlin, we will take measures to counteract the cannibalization of sales, such as establishing its own ecommerce presence through initiatives like xyz.”</li> <li>▪ "At our digital unit, there is a specialized team focused on innovation, with two main areas of focus. They actively seek out market changes and innovations globally, analyzing other countries and their shopping behaviors, as well as collaborating with startups and tech giants."</li> <li>▪ “Inside the digital unit, we have implemented agile software development and conducted various training initiatives to enhance our digital fitness. Being solely focused on digital transformation within the firm network gives us an advantage in staying up-to-date with current trends and challenges.”</li> </ul>	<p>qualities of each region.</p> <p>⇒ Instead of using a national online shop, independent shops use an online store created by the digital unit.</p> <p>⇒ To address the difficulties and competitiveness in the area, regionally tailored actions are implemented.</p> <p>⇒ A specialist innovation team working with startups and established IT giants is part of the digital unit's focus on market shifts and worldwide analyses.</p> <p>⇒ Agile software development and training programs improve the digital unit's overall fitness.</p>	<p>taking risks, such as acquiring a startup from Israel, as we primarily operate within the boundaries of Germany. Unlike some competitors, we don't have the flexibility to venture beyond our core business model easily.”</p> <ul style="list-style-type: none"> <li>▪ “Our company has monetized its data through a platform where suppliers like Coca Cola can subscribe to access online sales figures, extending down to individual stores. This allows partners to derive their own advertising campaigns, promotions, and actions based on the data. We invest in this partner portal and incorporates payments, discounts, and promotions from suppliers to monetize their digital data.”</li> <li>▪ “Maintaining a strong focus on the end customer is crucial for driving innovation. Retailers at the local level have daily interactions with customers and understand their needs, but this customer-centric perspective may be lacking at the central level of our company. Breaking down silos and gaining a broader understanding of customer behavior and preferences across different locations can lead to better insights and targeted innovations.”</li> </ul>	<p>⇒ Being a cooperative with little flexibility makes it difficult to explore new opportunities and risks outside of Germany.</p> <p>⇒ Through a partner portal, suppliers can pay a subscription fee to obtain online sales statistics and create their own campaigns using the data.</p> <p>⇒ By bridging the knowledge gap between local merchants' encounters with consumers and the central level's understanding of customer behavior, maintaining a customer-centric emphasis is crucial for fostering innovation.</p>
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<p><b>Conclusions</b></p>	<ul style="list-style-type: none"> <li>▪ “In order to drive innovation, it is important to standardize and document the basic services needed for a new business model, such as user management, ERP services, and access to categorized data. This foundation allows for shorter time to market and streamlined implementation.”</li> <li>▪ “The absence of a fundamental platform architecture is becoming a hindrance to our initiatives, leading to increased costs and slower progress. This forces us to maintain the traditional business model for longer, as it remains profitable.”</li> <li>▪ “Budget planning processes should be more flexible and aligned with the speed required for innovation. Establishing a dedicated fund for risk capital allows for quick access to resources to test and implement ideas without being constrained by lengthy planning cycles.”</li> <li>▪ “We need to create a culture of openness and connectivity within the company network, where ideas can be shared and heard from all colleagues. Currently, we only hear filtered information from the regions that aligns with the specific strategies in place. However, we need to consider ideas and input from all levels, creating an environment where everyone feels included.”</li> <li>▪ “We need to adopt a mindset similar to a venture capital firm, where we see opportunities for investment and improvement. Instead of hoping that each retailer will drive their own</li> </ul>	<ul style="list-style-type: none"> <li>⇒ For innovation to occur and for quicker adoption, basic services must be standardized and documented.</li> <li>⇒ Progress is hampered and reliance on the established business model is prolonged by the absence of a platform architecture.</li> <li>⇒ Flexible budget planning and a dedicated risk capital fund enable quick resource access for testing ideas.</li> <li>⇒ All coworkers' thoughts and participation are welcome when a culture of openness and inclusion is established.</li> <li>⇒ Adopting a venture capital attitude entails actively assisting retailers as a group in their quest for</li> </ul>	<ul style="list-style-type: none"> <li>▪ “The opportunity lies in leveraging our existing data and processes, including procurement and logistics, to cover a wide range of possibilities. If we can create a new startup based on these processes and data, similar to what “xxx” did with “xyz” we can extract value from what we already have. I would be thrilled if we could explore these opportunities, venture into new areas, and utilize our existing resources.”</li> <li>▪ “We should aim for our digital unit to become the digital experts for the entire company network, participating in the architecture for digital transformation. It is not enough to have this strategy written on a slide; we must truly commit to it. By allocating resources and collaborating with both regional entities and the central organization, we can drive meaningful transformations.”</li> <li>▪ “We need connected digital experts across all levels, but currently, it's only happening sporadically. Information often gets lost when it's passed from one level to another, relying on word of mouth or hearsay. We have over xx colleagues in the network, many of whom are digital experts, but we're not leveraging this potential. We should be capitalizing on our position as the market leader in the German grocery retail industry with the largest employee base and extensive expertise. The challenge is how to bring it all together</li> </ul>	<ul style="list-style-type: none"> <li>⇒ Utilizing current procedures and data offers a chance to launch a firm and maximize resource efficiency.</li> <li>⇒ The digital division has to become knowledgeable and involved in the company's digital transformation.</li> <li>⇒ Leveraging the company's industry leadership and knowledge requires improving connection and communication among digital professionals at all levels.</li> </ul>
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	initiatives, we should proactively manage and support them as a collective, fostering a culture of innovation and growth.”	development and expansion.	and foster connectivity. We're not operating in a connected manner, and top-down models of assigning individuals titles and responsibilities for digitalization have not worked well in the past.”	
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**Table C. Digital Mastery: Company A****How well is your company building digital capabilities?**

<b>Answer each question on a scale of 1 to 7, where. 1 = strongly disagree; 4 = neutral; and 7 = strongly agree, and then add up the points for your digital skills.</b>	<b>Score</b>
We use digital technologies (such as analytics, social media, mobile and embedded devices) to better understand our customers.	5
We use digital channels (such as online, social media and mobile) to market our products and services.	6
We sell our products and services through digital channels.	7
We use digital channels to provide service to our customers.	7
Technology enables us to link customer-facing and operational processes in new ways.	5
Our core processes are automated.	4
We have an integrated view of key operational and customer information.	4
We use analytics to make better operational decisions.	5
We use digital technologies to improve the performance or add value to our existing products and services.	7
We have introduced new business models based on digital technologies.	6
<b>Total score</b>	<b>56</b>

**How well does your organization build leadership capacity?**

<b>Answer each question on a scale of 1 to 7, where. 1 = strongly disagree; 4 = neutral; and 7 = strongly agree, then add up the points for your leadership skills.</b>	<b>Score</b>
Senior executives have a transformative vision of the digital future of our company.	4
Senior executives and middle managers have a shared vision of digital transformation.	4
There are opportunities for everyone in the company to participate in the digital transformation discussion.	3
The company promotes the cultural change necessary for digital transformation.	6
The company invests in the necessary digital skills.	5
Digital initiatives are coordinated across silos such as functions or regions.	5
Roles and responsibilities for leading digital initiatives are clearly defined.	7
Digital initiatives are evaluated against common performance metrics.	7
IT and business leaders work in partnership.	6
The performance of the IT department meets the needs of the business.	6
<b>Total Score</b>	<b>53</b>

**Table D. Digital Mastery: Company B**

**How well is your company building digital capabilities?**

<b>Answer each question on a scale of 1 to 7, where. 1 = strongly disagree; 4 = neutral; and 7 = strongly agree, and then add up the points for your digital skills.</b>	<b>Score</b>
We use digital technologies (such as analytics, social media, mobile and embedded devices) to better understand our customers.	7
We use digital channels (e.g. online, social media and mobile) to market our products and services.	6
We sell our products and services through digital channels.	5
We use digital channels to provide service to our customers.	4
Technology enables us to link customer-focused and operational processes in new ways.	4
Our core processes are automated.	7
We have an integrated overview of important operational and customer information.	5
We use analytics to make better operational decisions.	6
We use digital technologies to enhance the performance or added value of our existing products and services.	5
We have introduced new business models based on digital technologies.	2
<b>Total score</b>	<b>51</b>

**How well does your organization build leadership capacity?**

<b>Answer each question on a scale of 1 to 7, where. 1 = strongly disagree; 4 = neutral; and 7 = strongly agree, then add up the points for your leadership skills.</b>	<b>Score</b>
Senior leaders have a transformative vision of the digital future of our business.	5
Senior and middle managers share a common vision of digital transformation.	5
There are opportunities for everyone in the company to participate in the discussion about digital transformation.	7
The company promotes the cultural change necessary for digital transformation.	6
The company invests in the necessary digital skills.	5
Digital initiatives are coordinated across silos such as functions or regions.	3
Roles and responsibilities for leading digital initiatives are clearly defined.	3
Digital initiatives are evaluated against common performance metrics.	1
IT and business leaders work in partnership.	5
The performance of the IT department meets the needs of the business.	5
<b>Total Score</b>	<b>45</b>