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"Business model innovation: Developing a Business model for Managed Service Provider in Consideration of Digitalization"

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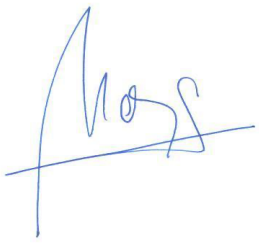

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“I learned to always take on things
I’d never done before:
Growth and comfort do not coexist.”

- Ginni Rometty (2014) -

ABSTRACT

The IT provider sector has experienced a substantial acceleration in digitalization due to the COVID-19 pandemic. As businesses worldwide faced unprecedented challenges and disruptions, there was an increased demand for digital solutions and services to support remote work, online collaboration, and digital transformation initiatives, leading to a rapid adoption of digital technologies by IT providers to meet these changing needs. So, the IT provider sector has undergone significant changes driven by digitalization and technology trends. This dissertation presents a comprehensive analysis of relevant factors how to choose the IT provider and the major fields for them to improve their business model (BM). The literature review examines the impact of digitalization and technology trends on the IT provider sector, with a focus on business model innovation (BMI). Studies emphasize the requirement for Managed Service Providers (MSPs) to adjust their business models to embrace digitalization, leverage cutting-edge technologies e.g., artificial intelligence, cloud computing and internet of things and provide value-added services to their customers. BMI is identified as a crucial strategy for MSPs to drive growth and stay competitive. This dissertation's **primary objective** is to assess how digitalization affects the BM of MSPs while considering the evolving needs in the German-speaking market. To investigate companies' requirements for MSPs, the research **methodology** is structured into three components. First, an analysis of studies pertaining to digital transformation is done. Secondly, a systematic literature review is conducted, categorizing BMI within the MSP sector. Finally, empirical research is carried out through a survey questionnaire. To ensure a holistic approach, insights are harmonized from consulting surveys and academic sources. This synthesis resulted in the development of a comprehensive analytical framework, reinforcing the credibility, practicality, and scholarly robustness of the dissertation's methodology.

A systematic literature review unveiled 23 pertinent studies. Notable **findings** highlighted pioneering technologies driving BMI in managed services, such as cloud computing, processing services, and big data analytics. The synthesis of available discourse suggests that establishing a distinct position in a dynamic market involves a synergistic blend of knowledge partnerships in development and provision, along with customer partnerships on the demand side. The quantitative empirical study involved 50 participants, including C-level executives

and IT managers, resulting in substantial findings. Primary reasons to work with MSPs include cost savings, risk reduction, and IT modernization. Key factors attracting companies to MSPs are high availability, transparent costs, and internal capacity enhancement. These insights provide guidance for both companies seeking MSP partnerships and MSPs aiming to align their services with client needs. Furthermore, the research underscores the importance of MSPs continuously improving their service offering. Inhibitors hindering service improvement efforts are identified, including the insufficient maturity of affected business processes, concerns about knowledge loss during outsourcing, and the increased coordination effort required. These findings highlight the importance of well-structured communication and collaboration mechanisms in MSP partnerships. The analysis of the empirical study also reveals if there are differences about large companies or small and medium-sized businesses (SMBs) in working with MSPs.

In conclusion, this dissertation offers beneficial **theoretical and managerial insights** for the MSP landscape. Theoretical implications highlight the compelling reasons for companies to engage with MSPs, emphasizing their role in driving innovation to attain competitive advantages. Leveraging technologies, such as AI and cloud computing, emerges as a strategic avenue for MSPs to foster innovation. On the managerial front, this research underscores the potential for companies to leverage MSPs for efficiency gains. Additionally, strategic selection criteria, including key questions for MSP selection, are outlined, providing practical guidance for organizations seeking to optimize their MSP partnerships.

In **future research** within the MSP sector, key areas for exploration include specialized services (e.g., security and business process outsourcing), nuanced innovation, security practices, consultative selling strategies, effective implementation plans, and exit strategies. Addressing these areas will enhance understanding and practical applications within this sector. This study enriches the existing academic literature by providing valuable insights into the imperative for MSPs to shift their BM to achieve success in the near future and offer actionable strategies for companies aiming to thrive in the evolving IT services landscape.

Key words: Digitalization, Digital Transformation, Service Provider, Business model innovation (BMI)

RESUMEN

El sector de los proveedores de TI ha experimentado una aceleración sustancial de la digitalización debido a la pandemia de COVID-19. A medida que las empresas de todo el mundo se enfrentaban a retos y trastornos sin precedentes, aumentó la demanda de soluciones y servicios digitales para apoyar el trabajo a distancia, la colaboración en línea y las iniciativas de transformación digital, lo que llevó a una rápida adopción de tecnologías digitales por parte de los proveedores de TI para satisfacer estas necesidades cambiantes. Así pues, el sector de los proveedores de TI ha experimentado cambios significativos impulsados por la digitalización y las tendencias tecnológicas. Esta tesis presenta un análisis exhaustivo de los factores relevantes a la hora de elegir el proveedor de TI y los principales campos para que mejoren su modelo de negocio. La revisión bibliográfica examina el impacto de la digitalización y las tendencias tecnológicas en el sector de los proveedores de TI, centrándose en la innovación del modelo de negocio. Los estudios hacen hincapié en la necesidad de que los proveedores de servicios gestionados ajusten sus modelos de negocio para adoptar la digitalización, aprovechar las tecnologías de vanguardia, por ejemplo, la inteligencia artificial, la computación en nube y el internet de las cosas, y prestar servicios de valor añadido a sus clientes. La innovación del modelo de negocio se identifica como una estrategia crucial para que los proveedores de servicios gestionados impulsen el crecimiento y sigan siendo competitivos. El **objetivo principal** de esta tesis es evaluar cómo afecta la digitalización al modelo de negocio de los proveedores de servicios gestionados, teniendo en cuenta la evolución de las necesidades en el mercado de habla alemana. Para investigar las necesidades de las empresas en materia de proveedores de servicios gestionados, la **metodología** de investigación se estructura en tres componentes. En primer lugar, se realiza un análisis de los estudios relativos a la transformación digital. En segundo lugar, se lleva a cabo una revisión sistemática de la literatura, categorizando la innovación del modelo de negocio dentro del sector de los proveedores de servicios gestionados. Por último, se lleva a cabo una investigación empírica mediante un cuestionario de encuesta. Para garantizar un enfoque holístico, se armonizan las percepciones procedentes de encuestas de consultoría y fuentes académicas. Esta síntesis dio lugar al desarrollo de un marco analítico exhaustivo, reforzando la credibilidad, practicidad y solidez académica de la metodología de la tesis.

Una revisión bibliográfica sistemática reveló 23 estudios pertinentes. Entre las **conclusiones** más destacadas figuran las tecnologías pioneras que impulsan la innovación del modelo de negocio en los servicios gestionados, como la computación en nube, los servicios de procesamiento y el análisis de macrodatos. La síntesis del discurso disponible sugiere que el establecimiento de una posición diferenciada en un mercado dinámico implica una mezcla sinérgica de asociaciones de conocimiento en el desarrollo y la prestación, junto con asociaciones de clientes en el lado de la demanda. El estudio empírico cuantitativo contó con 50 participantes, entre los que se encontraban ejecutivos de nivel C y directores de TI, y arrojó conclusiones sustanciales. Las principales razones para trabajar con proveedores de servicios gestionados son el ahorro de costes, la reducción de riesgos y la modernización de las TI. Los factores clave que atraen a las empresas hacia los proveedores de servicios gestionados son la alta disponibilidad, los costes transparentes y la mejora de la capacidad interna. Estas percepciones proporcionan orientación tanto para las empresas que buscan asociaciones con proveedores de servicios gestionados como para los proveedores de servicios gestionados que pretenden alinear sus servicios con las necesidades de los clientes. Además, la investigación subraya la importancia de que los proveedores de servicios gestionados mejoren continuamente su oferta de servicios. Se identifican inhibidores que dificultan los esfuerzos de mejora de los servicios, como la insuficiente madurez de los procesos empresariales afectados, la preocupación por la pérdida de conocimientos durante la externalización y el mayor esfuerzo de coordinación necesario. Estas conclusiones ponen de relieve la importancia de contar con mecanismos de comunicación y colaboración bien estructurados en las asociaciones de proveedores de servicios gestionados. El análisis del estudio empírico también revela si existen diferencias sobre las grandes empresas o las pequeñas y medianas empresas a la hora de trabajar con proveedores de servicios gestionados.

En conclusión, esta disertación ofrece **perspectivas teóricas y de gestión** beneficiosas para el panorama de los servicios gestionados. Las implicaciones teóricas ponen de relieve las razones de peso para que las empresas contraten a proveedores de servicios gestionados, destacando su papel en el impulso de la innovación para lograr ventajas competitivas. El aprovechamiento de las tecnologías, como la IA y la computación en nube, emerge como una vía estratégica

para que los proveedores de servicios gestionados fomenten la innovación. Desde el punto de vista de la gestión, esta investigación subraya el potencial de las empresas para aprovechar a los proveedores de servicios gestionados con el fin de aumentar la eficiencia. Además, se esbozan los criterios de selección estratégica, incluidas las preguntas clave para la selección de proveedores de servicios gestionados, proporcionando una guía práctica para las organizaciones que buscan optimizar sus asociaciones con proveedores de servicios gestionados.

En **futuras investigaciones** dentro del sector de los proveedores de servicios gestionados, las áreas clave para la exploración incluyen servicios especializados (por ejemplo, seguridad y externalización de procesos empresariales), innovación matizada, prácticas de seguridad, estrategias de venta consultiva, planes de implementación eficaces y estrategias de salida. Abordar estas áreas mejorará la comprensión y las aplicaciones prácticas dentro de este sector. Este estudio enriquece la bibliografía académica existente al aportar valiosas ideas sobre la necesidad imperiosa de que los proveedores de servicios gestionados cambien su modelo de negocio para alcanzar el éxito en un futuro próximo y ofrecer estrategias aplicables a las empresas que aspiran a prosperar en el panorama cambiante de los servicios de TI.

Palabras clave: Digitalización, Transformación Digital, Proveedor de Servicios, Innovación del Modelo de Negocio

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AI	Artificial Intelligence
API	Application Programming Interface
ASP	Application Service Provider
B2B	Business-to-Business
B2C	Business-to-Consumer
BCT	Blockchain Technology
BDA	Big Data Analytics
BGB	German Civil Code (Bürgerliches Gesetzbuch)
BITKOM	German Association for Information Technology, Telecommunications and New Media
BM	Business model
BMI	Business model innovation
BPA	Business Process Automation
BPaaS	Business-Process-as-a-Service
BPM	Business Process Management
BPO	Business Process Outsourcing
BSI	Bundesamt für Sicherheit in der Informationstechnik
CEO	Chief Executive Officer
CIO	Chief Information Officer
COVID-19	SARS-CoV-2 virus
CPU	Central Processing Unit
CRM	Customer Relationship Management
CTO	Chief Technology Officer
DACH	Germany, Austria and Switzerland
DESI	Digital Economy and Society Index
DB	Database
DV	Dependent variable
EDA	Exploratory data analysis

EEA	Employee entrepreneurial activity
EFC	Entrepreneurial framework conditions
ENISA	European Agency for Network and Information Security
ERP	Enterprise Resource Planning
GEM	Global Entrepreneur Monitor
GTM	Go-to-Market
HaaS	Hardware-as-a-Service
HR	Human Resources
IaaS	Infrastructure-as-a-Service
IBM	International Business Machines
ICT	Information and Communication Technology
IFM	Institut für Mittelstandsforschung
IoT	Internet of Things
IP	Internet Protocol
ISV	Independent Software Vendor
IT	Information Technology
ITeS	IT-enabled-Services
ITO	IT Outsourcing
KPI	Key Performance Indicators
KPO	Knowledge Process Outsourcing
LoB	Line of Business
MIS	Management Information Systems
MSP	Managed Service Provider
MSSP	Managed Security Service Provider
MVP	Minimum Viable Product
NIST	U.S. National Institute of Standards and Technology
OS	Operating System
OSS	Open Source Software
P2P	Peer-to-Peer

PaaS	Platform-as-a-Service
PoV	Proof of Value
RAM	Random Access Memory
RMM	Remote Monitoring and Management
ROI	Return on Investment
RQ	Research question
SaaS	Software-as-a-Service
SEA	Social entrepreneurial activity
SLA	Service Level Agreement
SMBs	Small and medium-sized businesses
SQ	Survey question
TEA	Total early-stage entrepreneurial activity
TRX	Transaction
VPN	Virtual Privat Network
WAN	Wide Area Network

1 INTRODUCTION

"To change is difficult. Not to change is fatal." Charles Darwin[1]

1.1 Importance of the Research

In today's fast-paced business world, digitalization, business model innovation (BMI), and managed service providing (MSP) are pivotal components for any organization to remain competitive and successful. Fichman et al. (2014, pp. 329-332) argued that digitalization refers to using digital technologies to transform traditional business processes and models, while BMI involves creating new, unique ways to deliver value to customers. Additionally, Lacity and Willcocks (2018, p. 196) determined that MSP is the practice of outsourcing specific business processes to a third-party provider who assumes responsibility for managing and executing those processes on behalf of the organization.

Collectively, these three concepts possess the capability to completely transform the operational landscape of businesses and enhance the value they offer to their customers. By leveraging digital technologies and BMI, organizations can streamline their operations, reduce costs, and improve customer satisfaction, according to Wamba et al. (2015, pp. 234-236). MSP can further amplify these advantages by enabling businesses to concentrate on their fundamental strengths, all the while entrusting non-core tasks to adept service providers.

However, implementing digitalization, BMI, and MSP requires careful planning and execution. Companies must evaluate their current operations and identify areas where these concepts can be applied to generate the greatest impact. They must also ensure they have the necessary resources and expertise to implement and manage these initiatives effectively (Hund et al., 2021, pp. 1-6).

[1] (Forrester, 2011)

Despite these challenges, organizations leveraging digitalization, BMI, and MSP can gain a significant competitive advantage in their industries. As technology advances and customer expectations evolve, as Westermann et al. (2014, p. 1 f.) stated, these concepts will only become more critical for businesses looking to remain relevant and successful in the digital age.

The rapid advancement of information technology has led to a significant transformation in how businesses operate, innovate, and compete in today's economy. As Bill Gates famously stated, the relationship between information technology (IT) and business has become inseparable, with technology enabling new and innovative BMs that were previously unimaginable. He stated (Gates and Hemingway, 1999, p. 5),

"Information technology and business are becoming inextricably interwoven. I don't think anybody can talk meaningfully about one without talking about the other."

Bughin et al. (2018) stated that digitalization has opened up new opportunities for companies to enhance customer engagement, streamline operations, and create new revenue streams. In this context, businesses must develop an IT strategy that aligns with their overall objectives to fully leverage the power of technology and stay competitive in the market. Additionally, digitalization has brought fundamental changes to many areas, including politics, business, and society. The use of new technologies, which are constantly evolving, is also changing the framework conditions for companies. Innovative technologies such as cloud computing, big data analytics (BDA), blockchain, and the internet of things (IoT) significantly impact companies' futures in all sectors of all sizes. BMI is, on the one hand, resource-intensive but, on the other, a real challenge. In addition, companies often do not know the starting point and the transformation process from the previous BM to the new one.

New and successful BMs show how traditional BMs are being overtaken. Schallmo et al. (2016, pp. 3–5) stated that this increases the pressure on companies to innovate enormously. In addition, the COVID-19 pandemic has also further advanced the progress of digitalization. Completely new opportunities have arisen from technological progress and increasing networking in the dynamic market. The COVID-19 pandemic has profoundly impacted accelerating the adoption of digitalization across various industries. The outbreak forced businesses and individuals to adapt quickly to new circumstances, such as lockdowns and social

distancing measures, severely restricting in-person interactions while creating a pressing need for digital solutions to maintain operations, communication, and service delivery. As a result, organizations have rapidly shifted to remote work arrangements, online collaboration tools, and digital platforms to ensure business continuity. The pandemic acted as a catalyst, revealing the vulnerabilities of traditional systems, and highlighting the potential of digital technologies to enhance resilience and agility. Additionally, the increased reliance on digital solutions during the pandemic exposed the benefits of automation, artificial intelligence (AI), and data analytics in optimizing processes, enabling remote monitoring, and enhancing efficiency. The desire to minimize physical contact and reduce dependence on manual operations fueled the drive toward digitalization (Shashidhar, 2022, pp. 430-432). The COVID-19 pandemic has been a significant catalyst in promoting and accelerating digital transformation across various sectors. Therefore, this dissertation focuses on the value creation of IT service providers for the customer because, in the end, as suggested by Schiuma et al. (2021, pp. 122–125), what is relevant for the customers is when they benefit most through individual advantages.

This thinking also applies to the IT provider sector in particular. MSPs have been around since the 1990s. Over the years, the service portfolio has considerably changed because there is no longer a clear separation between IT and business since IT is now much closer to the core business. Modernization and renewal play an important role in bringing applications or even infrastructures into the new digital world (Weinrauch and Fang, 2021, p. 27). Lee et al. (2012, p. 541) explained that more companies are increasingly using the services of MSPs, which offer opportunities and risks outlined in this dissertation.

Additionally important is digital servitization to BMs. For example, Kohtamäki et al. (2019, pp. 380-383) examined the impact of digitalization on individual companies' BMs and the need for alignment among ecosystem companies. Digitalization has been recognized as an enabler and driver of BMs, value creation, and value capture in servitization studies. However, early research on servitization underscored the role of software. While challenges related to data collection, warehousing, analytics, and prediction are still being addressed, the complexity and configuration of BMs pose additional obstacles. Customer expectations include customization, hardware-centric purchases, and reluctance to

adopt novel solutions. Digital servitization necessitates collaboration across company boundaries, and both technology and BMIs are required for rapid transformation (Kohtamäki et al., 2018, pp. 1-5). The interplay between digital servitization BMs and theories of the companies within ecosystems and platforms is essential. These models offer new opportunities for research in digital servitization and enable new strategic configurations. The concept of ecosystems within the value system is introduced, with a hub company driving and developing its business ecosystem. Developing connected solutions beyond single-company boundaries gives rise to new ecosystems, which can be organized as markets using technologies such as blockchain. Hence, ecosystems and interorganizational networks should be conceptually differentiated to avoid confusion. When transitioning to a digital servitization BM, companies need to redefine their BM configurations to achieve strategic fit, as various activities depend on the capabilities of other companies (Brekke et al., 2023, p. 3), entailing the integration of product, service, and software systems. Moreover, customization plays a crucial role in value creation (Kohtamäki et al., 2022, p. 253). Different characteristics of solution offerings (e.g., customization levels) and product, service, and software attributes can be used to create a typology of digital servitization BMs. Changes in one company's BM can significantly impact the operations of other companies within the ecosystem (Sanchez-Gonzalez et al., 2019, pp. 1-3).

The lack of empirical research in the field of digital servitization has been identified, particularly concerning solutions, modularity, and the role of digitalization in outcome-based BMs. Further studies are needed to analyze the impact of digitalization on the development of companies, their offerings and capabilities, and the role of digitalization in shaping future BMs and services. Additionally, there is a need for more detailed empirical evidence on modularity and related routines in digital servitization, particularly in the context of industrializers.

This dissertation underscores the importance of software in servitization, and digitalization related to BMI for the IT service provider sector. As companies mature in combining servitization with digitalization, they enhance their monitoring, control, optimization, and automation capabilities (Kohtamäki et al., 2019 p. 383). This enhancement requires the involvement of actors within the value system, highlighting the significance of platforms and ecosystems.

Long-term competitiveness in digital servitization requires advanced offerings with customization, outcome-oriented approaches, and autonomous characteristics (Brekke et al., 2023, p. 2). The research contributes to the fields of servitization and digital servitization, providing insights into BM configurations and guiding strategizing efforts in the digitalization era.

In summary, research on BMI and MSPs is crucial for companies looking to enhance customer value, drive sustainable growth, gain competitive advantage, and enhance agility. By embracing these concepts, companies can create unique value propositions and remain competitive in a rapidly changing business landscape. Hence, this dissertation focuses on business issues such as the analysis and evaluation of the services provided by MSPs and the concrete requirements for the service providers in the near future underpinned by the approach of BMs to also show systematic ways to lead to the selection of MSPs and validation. The objective is to uncover new business potentials for future success, as explained below.

1.2 Problem Outline and Objective

The computer services industry is a mid-size industry in Europe, and MSPs belong to this industry. They provide different IT services to customers who are business clients, so they are active in the business-to-business (B2B) market. Current research and studies concentrate on the target markets of MSPs, which are small and medium-sized companies (Coppeneur-Gülz, 2006, pp. 11-14) or a model for quality measurement (Riedl, 2005, p. 15). This dissertation presents information for developing a new BM that includes the key success factors for MSPs to help MSPs since IT manufacturers can provide the right products and use the right contracts for the MSP BM.

Furthermore, there are major challenges in the market as the behavior of the B2B and business-to-consumer (B2C) market changes. According to Hagberg et al. (2016, p. 694 f.), access to data presently does not depend on time and place. Customers want real-time access to the necessary data, independently from their locations. In addition, they want to conduct initial analyses with their data.

Thus, the MSP aims to create new services and provide availability. It is necessary to make accommodations in the current BM. Another point is the costs.

Each MSP must look at its profitability in creating new services while meeting customers' price expectations. This factor should also be included in the analysis to form a kind of reminder for a profitable BM. It is also helpful for IT vendors to know which services the market needs while supporting MSPs in creating services with the right price and contract policy, as stated by Urbach and Ahlemann (2016, p. 17 f.).

Several research studies between 2000 and 2006 (e.g., Coppeneur-Gülz, 2006; Stone, 2000; Susarla et al., 2003) concentrated on the BM of application service providers (ASPs). Now is the time to look at the current challenges facing MSPs and develop a guideline for a new BM that influences the computer services industry in the German-speaking market. Limiting the study to this market can be justified for several reasons. Firstly, the current challenges facing MSPs vary across different markets, so a localized approach is more appropriate to fully understand the unique challenges and opportunities that the service providers face in the German-speaking market. Secondly, the German-speaking market is one of Europe's largest and most developed markets, with a strong tradition of innovation and technological advancement, ideal for studying the impact of emerging technologies on the computer services industry and developing new BMs as blueprints for other markets. Finally, cultural, and regulatory factors are unique to Germany, which impact how MSPs operate and compete in the market. Therefore, the limitation to this market helps to develop a more comprehensive understanding of the challenges and opportunities facing MSPs in this specific context to develop a new BM that can help them to thrive in the market.

The IT industry, in particular, is characterized by constant further development and constant change. In addition, digitalization continues to drive transformation in companies. The central question is how companies can tap into new market potential and continue to be successful. BMI is related to this development. As early as 2015, the International Business Machines (IBM) Global C- Study (IBM Corporation, 2015) showed that 80 % of companies are looking at new BMs.

The study contributed to the academic research in several areas. The three elements of MSP, digitalization, and BMI were brought together to explore how MSPs could adapt to the changing technological landscape and develop new BMs leveraging the power of digitalization. Hence, the study sought to contribute to the

broader conversation about the role of technology in business innovation and provide theoretical and practical insights for MSPs looking to transform their operations and create value in the digital age. The methodological approach was split into three main parts: 1) studies related to digital transformation were analyzed, 2) a systematic literature review classified BMI in the managed service sector, and 3) empirical research was conducted with a survey questionnaire.

BMI and MSPs are two critical concepts that have gained significant attention in the business and technology management literature, according to Putsch (2020). BMI is the process of creating, changing, or modifying the existing BM to create new value propositions for customers and new revenue streams for the business (Chesbrough, 2002, p. 529 f.). On the other hand, Focacci et al. (2013, p. 2) stated that MSPs are third-party IT service providers that deliver a wide range of services to organizations, including infrastructure management, application development and support, and security services.

Despite the growing interest in these two concepts, a significant research gap exists in understanding the relationship between BMI and MSPs. Specifically, there is a lack of empirical evidence regarding how MSPs can drive BMI and support organizations in achieving sustainable growth over the long term. One potential reason for this research gap is the lack of clarity around the role of MSPs in BMI. While MSPs are known to provide IT services to organizations, it is still unclear how MSPs can leverage their expertise and capabilities to drive BMI. Moreover, there is a need for further exploration of the factors that can influence the success of MSPs in supporting BMI, such as the quality of the relationship between the MSP and the client organization and the level of trust between the two parties. Another potential reason for this research gap is the lack of empirical evidence on the effectiveness of MSPs in driving BMI across different industries and organizational contexts. While some case studies have demonstrated the success of MSPs in driving innovation, there is still a need for more comprehensive and systematic research that examines the impact of MSPs on BMI across a variety of industries and organizational contexts (Venkatesh and Singhal, 2017a, pp. 1–9).

In conclusion, the research gap in understanding the relationship between BMI and MSPs represents a critical area for future research. Further exploration of this topic could provide valuable insights into how MSPs can support organizations in achieving sustainable growth and competitiveness over the long

term. Furthermore, this research could help MSPs better understand their role in driving BMI and identify the factors influencing their success. Additionally, in the next section, the major objectives of this research and the related research questions (RQs) are introduced.

1.3 Research Description

The main objective of this research is the development of a new BM for MSPs. Therefore, four RQs are identified, all related to the topic of MSP and focused on different aspects of that industry. A starting point is the following research question (RQ1).

The first RQ is about the empirical academic research in BMIs in managed IT services is based on a range of theories, methods, and data. Some of the commonly used theoretical frameworks include, for example, the business model canvas. Academic research on BMI in the managed IT services sector has reported various innovative practices, which is why the first research question reflects the current reporting of BMI and entails rethinking the organization's value proposition, revenue streams, cost structure, and customer segments.

RQ1: What theories, methods, and data have been used in empirical academic research on business model innovation in managed IT services, and what classifications have been reported in current academic research for these two areas?

Despite the significant progress made in academic research on BMI in managed IT services, several research gaps exist. This dissertation is focused on developing a more comprehensive framework for evaluating the success of BMI for MSPs. RQ2 identifies the gaps for future research.

RQ2: Which research gaps should future academic research work on to advance insights into business model innovation in managed services?

RQ3 focuses on identifying relevant factors and criteria companies use to choose an MSP. This research question recognizes that many factors can influence

a company's decision when choosing an MSP and seeks to identify these factors to help MSPs better understand their customers and improve their services. This RQ aims to identify the critical factors to improve the current BM of the MSP to be successful in the following years within the competitive services landscape. Possible areas of exploration for this RQ include analyzing the role of cost in MSP selection, investigating the impact of industry expertise on MSP selection, and exploring the role of trust and relationship building in MSP selection.

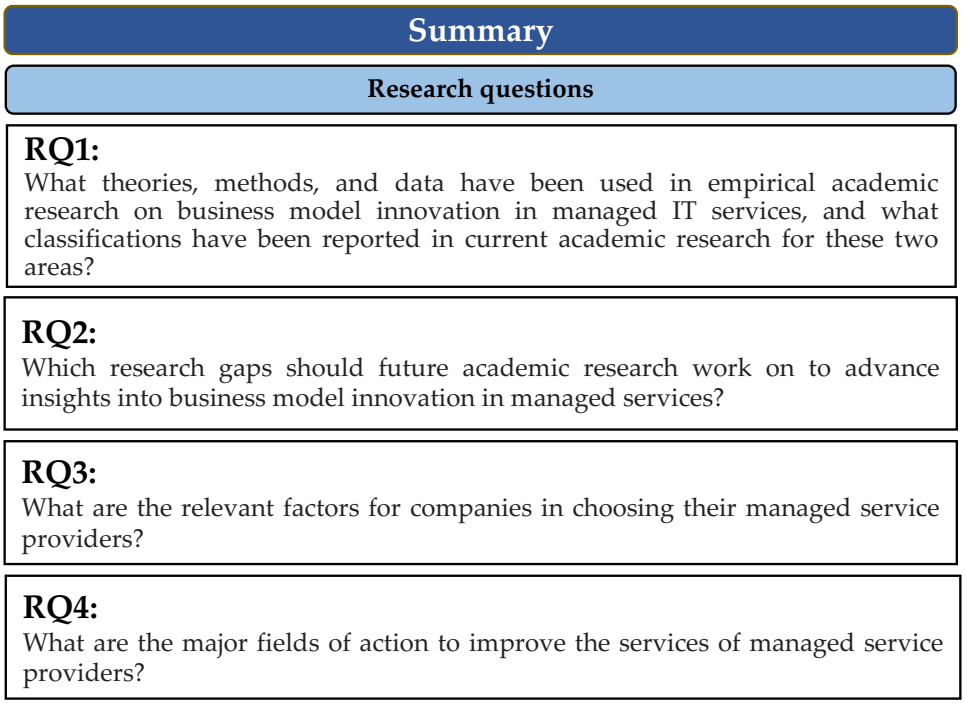
RQ3: What are the relevant factors for companies in choosing their managed service providers?

The last research question (RQ4) seeks to identify the major fields of action that MSPs can focus on to improve their services. This research question recognizes that MSPs operate in a highly competitive industry where customer satisfaction is key to success. Possible areas of exploration for this question include analyzing customer feedback to identify areas for improvement, exploring new service offerings that can add value to existing MSP services, and investigating the impact of outsourcing on MSP service quality.

RQ4: What are the major fields of action to improve the services of managed service providers?

Overall, these research questions are critical for understanding the MSP industry and identifying ways MSPs can remain competitive and deliver value to their customers. By exploring these questions, researchers can provide valuable insights into the MSP industry that can help MSPs improve their services and drive sustainable growth. The summary of the research questions is illustrated in Figure 1.

Figure 1: Summary Research Questions



Source: Own depiction

1.4 Methodology

The methodology summarized in Table 1 seeks to achieve the objective of this dissertation. The starting point is the review of the existing scientific literature for the research fields of digitalization, MSP, and BMI to build an understanding of these areas and develop hypotheses for this dissertation. The research is based on a deductive approach (Sedlmeier and Renkewitz, 2018, p. 25 f.). The RQs and the hypotheses are derived from the current state of the scientific research. In the methodology part, the first step is to screen the studies on digital transformation to identify the status quo of companies concerning digitalization and transformation. Next is the systematic literature review summary to provide an academic framework for classifying BMI in the managed service sector while clearly outlining the academic research gaps. Additionally, the review helps to answer RQ1–RQ2. Furthermore, a standardized questionnaire survey is used as a quantitative research method to answer the research questions RQ3–RQ4 and

hypotheses H1–H5 introduced in Section 2.4.3. This questionnaire was created in the online tool SurveyMonkey and sent out over three channels to more than 350 individuals. The sample includes experts in C-level positions or at least first-line managers in the IT department. This research focuses on the German-speaking market, mainly Germany, Austria, and Switzerland, as Europe's largest information and communication technology (ICT) market (Statista 2022, Mordor Intelligence 2022). Additionally, large companies and small- and medium-sized businesses (SMBs) are part of the research; both are the backbone of the German industry, and the author is familiar with the industry selection and the IT domain. Furthermore, researchers such as Osterwalder and Gassmann fundamentally researched the BM concept with roots in Switzerland. This dissertation reflects the theoretical framework and draws a consistent view on the BM of MSPs in Germany, Austria, and Switzerland: the DACH market. The aim is to achieve 50 valid questionnaire responses to gain a realistic view of the future BM of MSPs. The online survey is analyzed with IBM SPSS Statistics®, and the findings are analyzed with explorative, descriptive, and inferential statistics. Overall, the results are illustrated in Chapter 4. The following section describes this dissertation's structure to give a short overview.

Table 1: Approaches to address Research Questions

Approach	Fields of actions	Research questions
I Theory-based	Literature research and systematic literature review	RQ1–RQ2
II Theory-based	Develop questionnaire based on case studies and existing surveys	Build a foundation and develop RQ3–RQ4
III Practical approach	Own survey (questionnaire)	RQ3–RQ4

Source: Own depiction

1.5 Research Structure

The dissertation explores the impact of digitalization on the IT provider sector and the role of MSPs in the current business environment. The significance of this research lies in the fact that digital transformation has transcended being

optional and is now a requisite for companies aiming to maintain competitiveness in the market. The well-structured dissertation provides a comprehensive understanding of the impact of digitalization and technology trends on the IT provider sector, BMI and the future state of MSPs. A representation of the structure, comprising six primary chapters, is presented in Figure 2.

In the introduction (Chapter 1), this study's problem outline and objective is to investigate the adoption of IT providers and technology trends, specifically the role of MSPs in supporting companies' digitalization efforts. The description provides an overview of the research design, data collection, and analysis methods.

Chapter 2 then focuses on the theoretical framework and covers essential topics such as digitalization and technology trends, the fundamental impact of digitalization, platform-driven and data-driven technologies, and the IT provider sector. Furthermore, the framework explores the sales channels, IT outsourcing, and MSPs' BMI. It also differentiates between ideas, inventions, and innovation and discusses the development of a BM and its impact on digitalization. Hypotheses are developed from this theoretical framework.

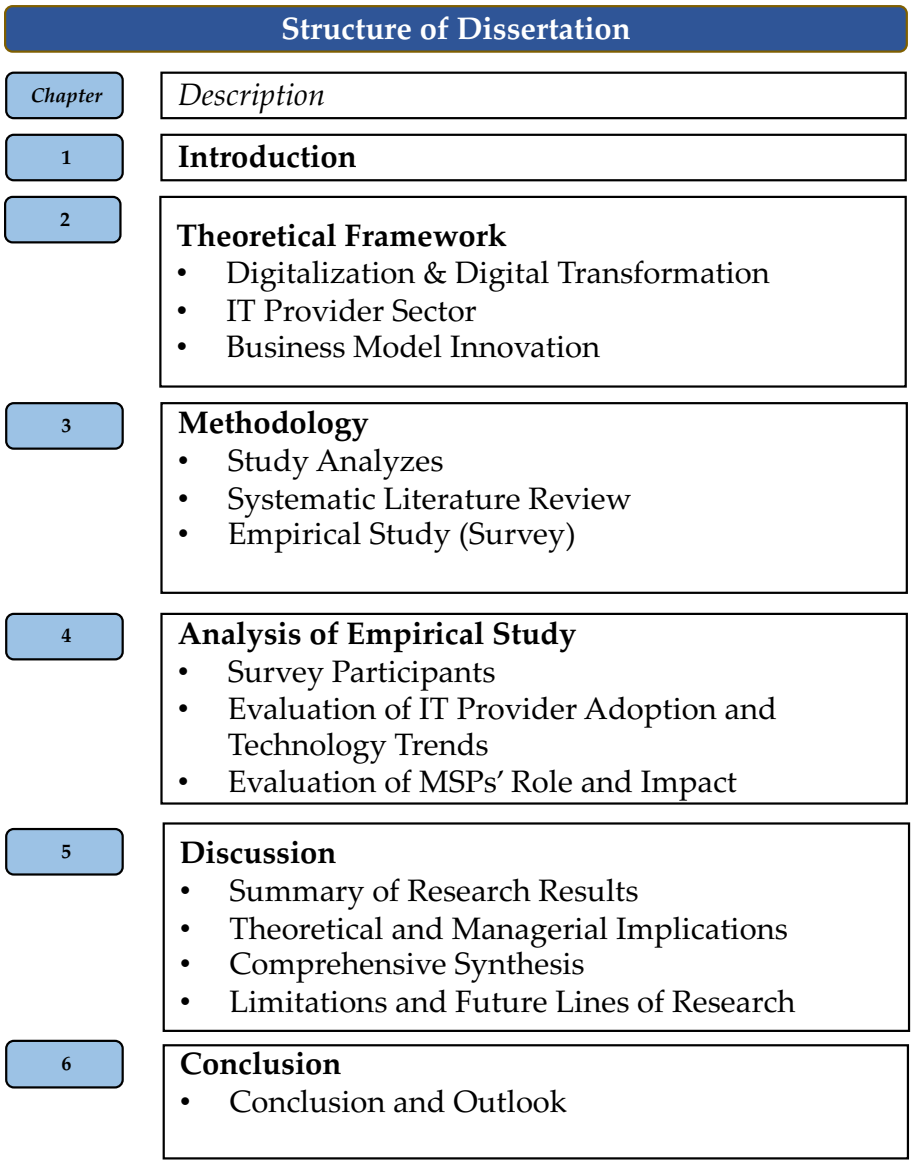
The methodology is part of Chapter 3. This section details studies on digital transformation in companies, a systematic literature review, an empirical study, and the quantitative research method. Additionally, the development of the questionnaire, sample characteristics, and pre-test evaluation are explained. Data evaluation methods are also outlined.

Afterward, the empirical study section is described in Chapter 4 and discusses the survey participants' characteristics and evaluates the adoption of IT providers and technology trends, MSPs' role and impact, and the impact of company size on willingness to engage with MSPs. Furthermore, it determines the areas of working with MSPs, exploring their critical factors and major fields.

In the discussion section (Chapter 5), the study's key findings are analyzed, and the research results are summarized. The theoretical and managerial implications of the findings are also discussed, along with the limitations and future lines of research.

Finally, the conclusion provides a comprehensive dissertation summary in Chapter 6.

Figure 2: Structure of Dissertation



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2 THEORETICAL FRAMEWORK

Digitalizing various industries has been an ongoing trend for several years, with technology continuously evolving and transforming how businesses operate, according to Weinrauch and Fang (2021, pp. 31-34). This dissertation explores the impact of digitalization and technology trends in the IT provider sector that led to the development of future BMs.

Section 2.1 delves into the fundamental impact of digitalization and how it has affected businesses across all sectors. First, the concept of digital transformation is described with technology trends (e.g., platform-driven and data-driven technologies). Additionally, the IT provider sector is investigated in Section 2.2, where various sales channels are described with the role of IT outsourcing (ITO) and MSPs. Afterward, an analysis shows how these providers have adapted their BMs to the changing digital landscape follows. Section 2.3 then explores the topic of BMI, which has become increasingly crucial for businesses to stay competitive in the digital age. In addition, the definition of the concept of a BM and differentiation between ideas, inventions and innovations is described. This subchapter concludes with the development of a BM and the impact of digitalization on BMs. Section 2.4 introduces a trio of research frameworks. The dynamic capabilities framework emphasizes a company's ability to adapt and innovate in evolving technological landscapes. Next, the entrepreneurial framework conditions investigate the external factors shaping entrepreneurial endeavors in the digital era. In addition, the business ecosystem model deepens the interconnectedness of businesses, customers, partners, and competitors, illustrating how digitalization transforms the dynamics of these relationships and the overall business landscape. By integrating these research frameworks, the dissertation examines the interplay between digitalization and BMI in the IT provider sector, providing a multifaceted perspective on the complex interactions at play.

Finally, in Section 2.5, the hypotheses are developed based on the theoretical research to examine the impact of digitalization on the IT provider sector and BMI.

The aim is to provide a comprehensive understanding of the current state of the IT provider sector and how businesses can adapt their BMs to thrive in the digital age.

2.1 Digitalization and Technology Trends

2.1.1 Fundamental Impact of Digitalization

Unexpected competitors are appearing and replacing established companies in the market. According to Schmutte (2020, p. 41), they are acting with speed, scalability, and innovation, which is increasing dramatically. However, many companies have not changed or adapted their behavior to new market conditions and customer expectations. This dissertation is focused on the current company requirements for their IT provider in the German-speaking market. In this subchapter, three main parts are in focus. First, analyzing the initial situation in a market index of the European Commission is used to demonstrate the degree of digitalization in Germany. Secondly, the Gartner hype cycle for emerging technologies illustrates the next years' IT trends. Finally, the description of top IT trends follows.

The European Commission has created the Digital Economy and Society Index (DESI), which measures each country's digitalization degree in the EU. The scale is from 0 to 100, with 100 as the best result. The index analyzes the following four categories: human capital, connectivity, integration of digital technology, and digital public services, as shown in Table 2 (European Commission, 2021, p. 14).

Table 2: DESI Sub-Dimensions, including Weighting

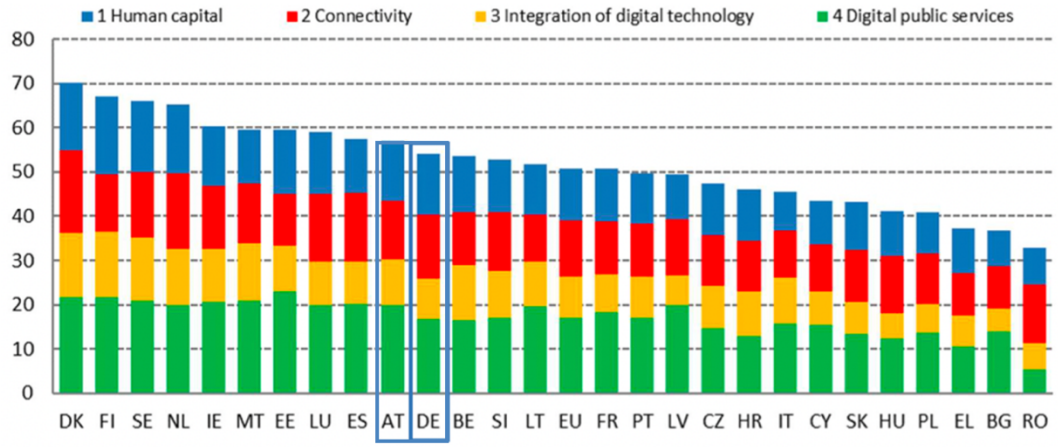
Dimension	Sub-dimensions	Weight
I Human capital	- Internet user skills - Advanced skills and development	50 % 50 %
II Connectivity	- Fixed broadband take-up - Fixed broadband coverage - Mobile broadband - Broadband prices	25 % 25 % 40 % 10 %

Dimension	Sub-dimensions	Weight
III Integration of digital technology	- Digital intensity - Digital technologies - E-Commerce	15 % 70 % 15 %
IV Digital public services	- E-Government	100 %

Source: Own depiction according to (European Commission, 2021, p. 12)

Every year, the index is calculated for each country in the EU and reflects the changes to the previous year (European Commission, 2021, p. 18). However, this dissertation is focused on the German market, and the DESI results of the year 2021 help to underline the topic. The results for Germany and Austria are highlighted in Figure 3. Switzerland is not included.

Figure 3: Digital Economy and Society Index 2021



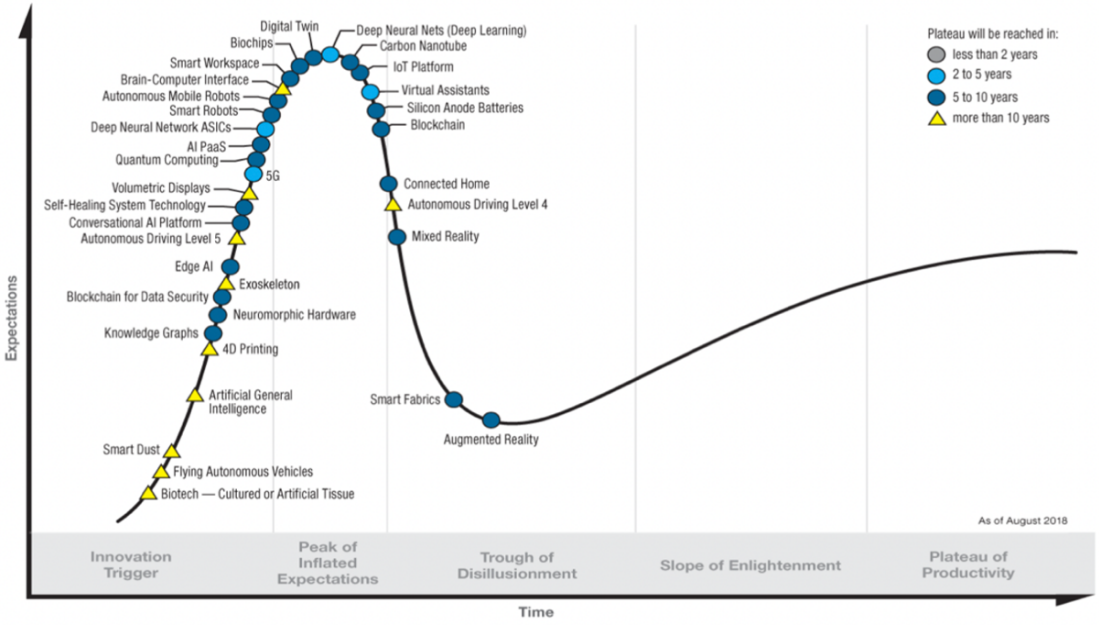
Source: (European Commission, 2021, p. 19)

According to the European Commission (2021, p. 3), overall, Germany has 54.1 points, ranking 11 of 27 EU member states above the average of the EU (50.7 points). The best performance is shown in Category II: connectivity. One factor for the ranking in Category II is that Germany is the leader in 5G readiness. However, in integrating digital technology, the market is not performing well (e.g., less than

29 % share information electronically, and only 18 % of SMBs use electronic invoices). Moreover, the German Federal Government has allocated EUR 130 billion to address the economic repercussions of the COVID-19 pandemic. This initiative aims to empower companies to explore and integrate novel technologies within their operations including such as AI, Quantum Computing and 5G. In addition to the results for Germany, Austria is ranked in the top ten with 54.7 points. The largest inhibitor is to achieve nationwide gigabit connectivity by 2030. To summarize, the DESI shows that the German-speaking market has a solid foundation for integrating digital technologies. Moreover, in digitalization, some technologies are marked as IT trends for the following years. According to the hype cycle for emerging technologies from Gartner, a respected consultancy company, technologies that can create value for companies are shown in a graph. This report is created annually to explain the path of future technologies. Van Heck (2019, p. 430) stated that the analysis consists of five areas: the innovation trigger, the peak of inflated expectations, the trough of disillusionment, the slope of enlightenment, and the plateau of productivity.

These technologies should deliver a high competitive advantage shortly. The trends for digital transformation are AI, BDA, cloud computing, the IoT, and blockchain technology. These can be used in various industries and all sizes of companies. Relevant are new skills to use the technology and build networks across business units and companies (Oswald and Krcmar, 2018, pp. 5-10). Most of the trends are included in the Gartner hype cycle for emerging technologies 2018 (Panetta, 2018), shown in Figure 4.

Figure 4: Gartner Hype Cycle for Emerging Technologies 2018



Source: (Panetta, 2018)

Furthermore, in 2019, Gartner stated that digital ecosystems are relevant. The relation between different market actors (companies, people, and things) is foundational on digital platforms. The objective is to transform traditional value propositions and enable dynamic connections across country borders and industries. The result for companies is to create new products / offerings and emerge new technologies to expand existing opportunities. Within this trend, Gartner included digital operations, synthetic data, and knowledge graphs (Panetta, 2018). A selection of trending technologies relevant to the digital transformation and services of MSPs are described in Sections 2.1.3 and 2.1.4.

According to Lemke et al. (2017, pp. 123-127), emerging technologies can provide radical opportunities for new BMs and innovation in general. The section focuses on digitalization and the aspects of digital transformation. Understanding digitalization and how it can impact, and drive BMI is important. A fundamental change in the economy and society is defined by digital transformation. It opens new opportunities for organizations, new distribution channels, and new approaches.

A company's innovation capability and success can change dramatically over the years. There are some negative examples of companies that did not survive because they stayed with the current BM while other players disrupted the economic field with new innovative BMs and offerings. There is a differentiation between disruptive technologies and disruptive BMs. In recent years, many technological innovations have become famous (e.g., the IoT and AI), as described in Section 2.1 and stated by Caputo et al. (2021, pp. 489–501).

Over the years, the global competition of companies has increased dramatically. Moreover, digitalization has merged the boundaries between products and digital services. What does it mean? For example, technology – software components – are no longer considered separate but part of a product. Furthermore, BMs have changed to platforms to drive more efficiency and deliver a different kind of value creation to gain competitive advantages (Parker et al., 2016, p. 122 f.).

Digitalization fundamentally impacts society, economy, politics, and everyone. This change is pervasive in all areas of life. Kollmann and Schmidt (2016, pp. 1-3) mentioned that the related digital transformation of information, communication, and transaction processes has built a new sphere of activity for companies and their employees. Thus, knowledge is necessary about digital markets and their actors. Today's challenges are international online competitions, which are pertinent for all industries. Ten years ago, the media industry passed the transformation, so nowadays, it is critical for other sectors like logistics, automotive, finance, and machine engineering. There are changes in product development and placement, and, of course, additional services will be more relevant in the future. Thus, companies must focus on setting up new digital BMs.

Table 3: Definitions of the term "Digitalization"

Authors	Definitions
Clerck, (2017)	"Digitalization is defined as the use of digital technologies and of data in order to create revenue, improve business, replace / transform business processes and create an environment for digital business, whereby digital information is at the core."
Hagberg et al., (2016, p. 694)	"Digitalization is one of the most significant on-going transformation of contemporary society and encompasses many elements of business and everyday life. Digitalization refers both to a transformation from 'analogue' to 'digital' (e.g. a shift from cash to electronic payments) and to the facilitation of new forms of value creation (e.g. accessibility, availability and transparency)."
Gobble, (2018, p. 56)	"Digitalization refers to the use of digital technology and probably digitized information, to create and harvest value in new way."
Vella and Devereux, (2018, p. 550)	"Digitalization is the process of spreading of a general purpose technology. The last similar phenomenon was electrification. Digitalization of products and services shortens distances between people and things. It increases mobility. It makes network effects decisive. It allows the use of specific data to such an extent that it permits the satisfaction of individual customer needs – be it consumers or businesses. It opens up ample opportunities for innovation, investment and the creation of new businesses and jobs. Going forward it will be one of the main drivers of sustainable growth."
Bomsel and Blanc, (2004, p. 195 f.)	"Digitalisation is the product of a wave of technological innovations that provoked a spectacular fall in the price of information processing, storage and transmission. […] Digitalisation signals a profound transformation in the classical view of the economic transaction."

Source: Own depiction according to (Clerck, 2017); (Hagberg et al., 2016, p. 694); (Gobble, 2018, p. 56); (Vella and Devereux, 2018, p. 550); (Bomsel and Blanc, 2004, p. 195 f.)

The following statement can be derived based on the definitions shown in Table 3. The term "digitalization" is related to technological innovations, which transform the traditional business and implement new ways of value creation to meet customer needs and build key drivers for success in the future (Bomsel and Blanc, 2004, p. 195 f.; Clerck, 2017; Gobble, 2018, p. 56; Hagberg et al., 2016, p. 694; Vella and Devereux, 2018, p. 550). Parida et al. (2019, p. 2) stated that digitalization can optimize a business process with the help of technology, which leads to change within an existing BM. Additionally, creating new offerings is vital in creating new value for customers. Overall, digitalization goes hand-in-hand with BMI.

As the foundational concept of digitalization is clarified, the next topic is the dynamic process of digital transformation, building on the principles of digitalization while propelling organizations toward innovation and growth in the digital age.

2.1.2 Digital Transformation

The business environment has much potential because of digital innovations, so corporations can translate this potential into opportunities. Companies face challenges regarding continuous improvement and finding their competitive advantage (Parida et al., 2019, pp. 2-4). According to Schwaninger (2010, p. 52 f.), the term "intelligent organization" has been raised over the years. The business philosophy of an intelligent organization is built on knowledge management. The company can create, organize, and share knowledge to increase operational efficiency and build a competitive advantage. The characteristics of an intelligent organization are flexible operations, monitoring the environment, identifying market signals, fast reactions to changes, and the possibility of executing new knowledge-based solutions to achieve benefits. Thus, organizations are using a growing amount of information. Traditional factors (e.g., production, labor, and capital) are losing relevance. However, knowledge is one of the key factors as information embedded within the organization or skills can deliver a competitive advantage. Different kinds of knowledge resources exist, such as data in documents or databases for clients, products, services, processes, and business partners. The term can also be non-codified as the knowledge of the employees in the organization.

Changing an organization's current approach with a new methodology with technology is part of a digital transformation. It is essential to open new opportunities and force change. The starting point is often implementing a new tool and not establishing a digital transformation within a cooperate, per McConnell (2016, p. 27). Customers' needs and requirements should be central to this process because they are the key enablers for companies like service providers. Digital transformation is becoming a primary driver for organizations to be successful and stay in the market. The term "digital transformation" is included in the field of digitalization, but it is not a synonym. Table 4 shows a selection of definitions listed below, but they are inconclusive.

Table 4: Definitions of the term "Digital Transformation"

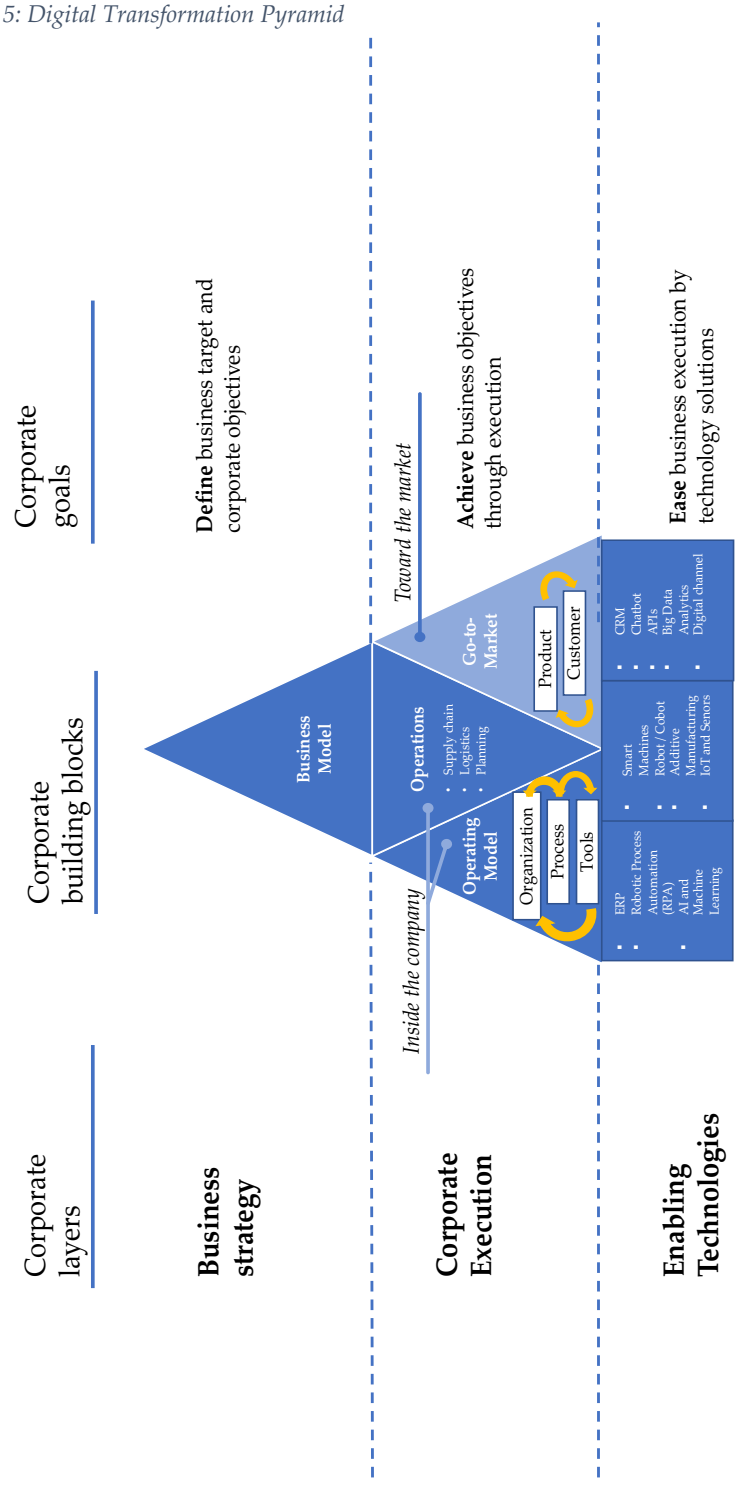
Authors	Definitions
Nwankpa and Roumani, (2016, p. 2)	"Digital transformation is characterized by changes and transformation which are driven and built on a foundation of technologies. Within an enterprise, digital transformation is defined as an organizational shift to Big Data, Analytics, Cloud, Mobile and Social Media Platforms."
Kugler and Anrich, (2018, p. 2)	"Enterprises undergoing digital transformation use the opportunities of information technology to increase the efficiency and productivity of processes."
Gaivoronskii et al., (2017, p. 3)	"Digital transformation refers not only to evolutionary but revolutionary changes in industries and technologies."
Mazzone, (2014, p. 8)	"The deliberate and ongoing digital evolution of company, business model, idea process or methodology, both strategically and tactically."
Legner et al., (2017, p. 301)	"Digital transformation is evident in numerous societal areas, such as substantial IT-induced changes in political decision-making, judicial frameworks and related to supply and demand in labor markets."

Source: Own depiction according (Nwankpa and Roumani, 2016, p. 2); (Kugler and Anrich, 2018, p. 2); (Gaivoronskii et al., 2017, p. 3); (Mazzone, 2014, p. 8); (Legner et al., 2017, p. 301)

The definitions of "digital transformation" have varied in their descriptions and attributes, showing no unique definition. Most have been conceptual and related to change or organizational shifts. The overall aim of "digital transformation" is to increase productivity and efficiency (e.g., reducing errors in manual work with the help of technology). Gaivoronskii et al. (2017) described it as *"revolutionary changes"* but did not include attributes or concepts. It can be concluded that the majority follow the concept of organizational shifts strategically and tactically. Therefore, it is logical for corporations to assess their existing circumstances and outline their desired transformation. Thus, in the following discussion, the digital transformation pyramid is exemplified. Turchi (2018) stated that two business dimensions are essential to assess a corporation's digital readiness. First is customer experience. As mentioned before, client needs and requirements are central to digital transformation and operational efficiency. However, it is not all about technology but identifying novel methods of working and discovering fresh approaches in addition to or as substitutes for the current BM. The framework of the digital transformation pyramid is based on three layers: business strategy, corporate execution, and enabling technologies.

A successful transformation for companies needs to cover at least two layers. However, long term, they need to cover all three layers. In the foundation of the transformation, it is critical to notice that each layer strongly influences the other framework elements. For example, implementing a new IT system (e.g., enterprise resource planning (ERP) or customer relationship management (CRM)) is not a digital transformation itself but can be part of a new operating model or a new go-to-market (GTM) model in the corporation. Figure 5 illustrates the three layers, including their elements (Turchi, 2018).

Figure 5: Digital Transformation Pyramid



Source: Own depiction according to (Turchi, 2018)

To summarize according to Turchi (2018), in the digital transformation To summarize, according to Turchi (2018), the digital transformation framework has five building blocks: the BM and strategy, the operating model, operations, the GTM, and technology. Indeed, the enabling technologies can influence the operations of a corporation and the operating model while helping establish a new GTM. However, implementing a new BM requires a clear definition of operating models, operations activities, and market approach.

Table 5: Layer of the Digital Transformation Pyramid

Layer	Description
I Business strategy defining the business model of a company	In a digital or digital-enabled environment, corporations have to rate the potential, opportunities, and threats of business models that are technology-enabled: - Platform business - Marketplaces - Value-added services - Data-based products and services.
II Corporate execution focus on inside the company and toward the market	Execution is the key element of a corporate transformation. Three building blocks are necessary for the execution part: - Operating model - Operation model of operations - GTM approach. Each block has different components. Parts of the operating model are the organization, procedure, and tools, which build up the corporate structure. Within the operations element, the process includes how a company realizes its products, services, and willingness to push to market. Additionally, in the GTM approach are the components of products and customers, which define the business strategy, including distribution channels, price policy, and communication. All these components of the corporate execution layer require attention in a digital transformation initiative.

Layer	Description
III Enabling technology supports the achievement of the business objectives	Technology is the enabler and supports all elements in the execution layer. It can help to develop a new operational model and to define the digital-enabled GTM approach. Technology serves as the primary catalyst for change across every tier of the pyramid and influences the cooperate strategy. Before deciding on technologies, companies must explore the market changes and adapt their strategic response to the chances, including enabling technologies.

Source: Own depiction according to (Turchi, 2018)

The digital transformation must combine the three layers (shown in Table 5) to succeed. Furthermore, the topic dominates the management agendas in companies. There are many stories about winners and losers of the digital transformation and who was disrupted by whom. Start-ups and established companies are working on innovative BMs to beat the digital transformation, which comes with speed and uncertainty. Per Oswald and Krcmar (2018, p. 9 f.), companies should evaluate opportunities offered by new technologies in terms of the potential to further develop current BMs.

2.1.3 Platform-Driven Technologies

2.1.3.1 Cloud Computing

The foundation for most of the technology trends is cloud computing. Despite its extensive presence in the literature and economy, there is still no uniform definition of the term in the research literature. However, reference is often made to the definition of the U.S. National Institute of Standards and Technology (NIST), which is also used by the European Commission (2021, p. 2), which defined cloud computing as follows (Mell and Grance, 2011):

"[…] is a model for enabling ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. This cloud model is composed of five essential characteristics, three service models and four deployment models."

Similar definitions can be found in the guidelines of the German Association for Information Technology, Telecommunications and New Media (BITKOM), a digital association in Germany that focuses on software, IT services, telecommunications, and internet services. Among other things, the association stands for innovative business and a future-oriented network policy. By focusing on current and digital trend topics, the association informs companies about cloud computing, for example. Thus, a guideline was developed dealing with the flexibility of cloud computing (BITKOM, 2015, p. 3). The following explanation was noted by BITKOM (2009, p. 13):

"Cloud Computing is a form of demand-oriented and flexible use of IT services. These are provided in real time as a service via the Internet and billed according to use. Cloud Computing thus enables users to redistribute investment and operating expenses. [...] Numerous technological improvement innovations have led to Cloud Computing, which will contribute to a new business quality."

In both definitions, the flexible use of the necessary demand is highlighted. In addition, the advantage of minimal administrative effort is expressed. Companies should not ignore the cost aspect, as noted in BITKOM's explanation. It can, therefore, be said that the definitions of the terms are similar in the attributes mentioned.

According to Foeckeler (2009, p. 33), flexibility is reflected in the supplier market and its use. Necessary components, such as software, are made available via one or more providers on the internet. The solutions offered are extremely scalable, and billing is based on usage (pay-as-you-use), enabling companies to benefit from cloud computing, especially when their systems are running at peak capacity. Furthermore, applications and services that have proven less successful or less necessary can be terminated quickly and easily. Amazon, Google, SalesForce, and IBM are well-known cloud service providers.

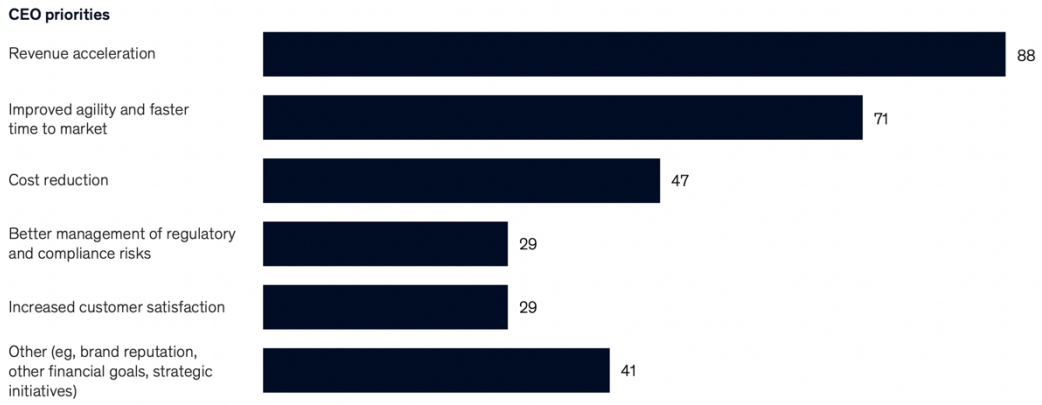
Vossen et al. (2012, p. 30 f.) considered three cloud types according to the deployment model, the degree to which the cloud is opened up to the outside:

- Private Cloud: owned by a single company for holistic control of selected access.
- Public Cloud: owned and controlled by companies providing fast access to computing power to other companies or individuals.

- Hybrid Cloud: a combination of public and private cloud for individual customized applications in complex environments.

McKinsey Digital (2019) found that chief executive officers (CEOs) have consistent top priorities, illustrated in Figure 6. These priorities are shown across different industries and with huge implications for BMs. The study was based on interviews with tech leaders at 52 enterprises worldwide in Spring 2019. Most companies (78 %) had at least 5,000 employees, while 44 % had more than USD 10 billion in annual revenues. With cloud computing CEOs, their top three priorities were revenue acceleration, agility (time-to-market), and cost reduction (McKinsey Digital, 2019, pp. 3-5).

Figure 6: Top three Priorities of CEOs



Source: (McKinsey Digital, 2019, p. 3)

2.1.3.2 Blockchain Technology

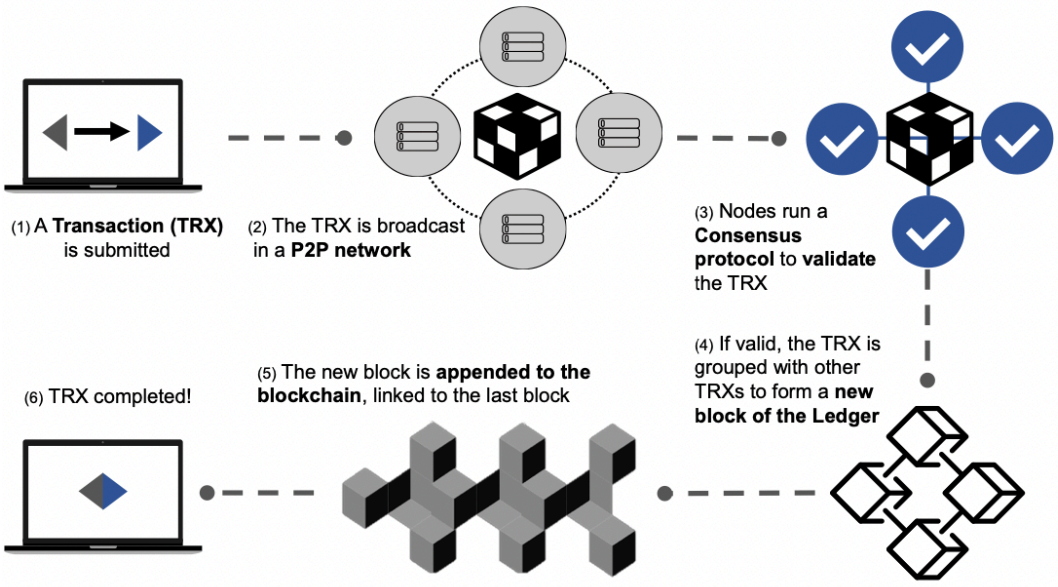
Globally, Ghiro et al. (2021, p. 1) mentioned that digitalization continues to advance and offers additional opportunities to make processes more efficient. Blockchain technology (BCT) allows networking beyond a decentralized IT infrastructure across several companies. BCT is a data recording technology. The advantages over other platform technologies are immutability, trustworthiness, and transparency of transactions in a network, and Guerpinar (2019, p. 605) defined it as follows:

"The blockchain is a decentralized, distributed, tamper-proof, cooperative user data store. Ordered and grouped records are stored in blocks that are concatenated by hash functions, each with a timestamp [...] Building on these attributes, the use of BCT solutions for enterprises can lead to more efficient business processes and increased transparency and flexibility."

In 2019, the BCT market was estimated to reach USD 2.2 billion, but USD 23.3 billion in 2023, according to a research report by Markets & Markets, showing tremendous growth in the BCT environment (Guerpinar et al., 2019, p. 605).

The lifecycle of one transaction in a blockchain is illustrated in Figure 7. Ghiro et al. (2021, p. 2) referenced that the starting point is to submit one transaction (TRX) announced in the P2P network. Nodes then run a consensus protocol and validate the TRX if the device owner has the necessary resources, and the transaction is secure. If the check is positive, the TRX is grouped with the latest transactions, and a new ledger is formed. Afterward, the user is notified about the successful transaction, and the data is transferred to the device.

Figure 7: Transaction Process in a Blockchain



Source: (Ghiro et al., 2021, p. 2)

BCT has the potential to transfer how value is exchanged. The technology can solve existing problems or build completely new BMs. The technology and business characteristics must be understood for implementing BCT in a BM. According to Ciupa (2019, p. 93), the most famous BCT is behind the cryptocurrency Bitcoin. This currency allows the transfer of a unit directly from computer to computer, from one person to the next, without an intermediary third party or a bank. With the help of this technology, it is possible to create a transparent ecosystem in the world, which significantly impacts existing BMs.

2.1.3.3 Quantum Computing

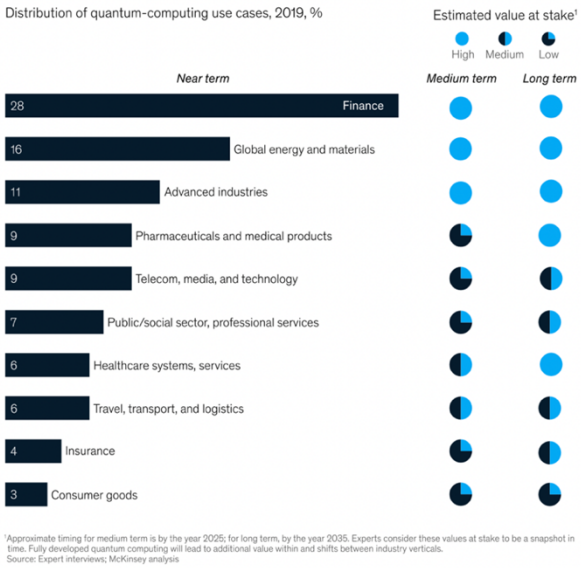
The next big thing is quantum computing. The largest technology providers are investing billions in their research and the development of quantum computing stated by Rietsche et al. (2022, p. 2525). Moreover, a report by McKinsey (Bogobowicz et al., 2023) showed a market value of USD 1 trillion by 2035 for this disruptive technology.

The principles of quantum physics can help to solve problems that are complex of a statistical nature and difficult for current computers. Piattini et al. (2020, p. 12) mentioned that

"Quantum computers, in their effort to provide faster computing speed, attempt to use various "counterintuitive" principles, such as superposition (objects can be in different states at the same time) and entanglement (objects can be deeply connected without any direct physical interaction). Quantum computational power lies in the concept of qubits, the computational unit of Quantum Computers, which emerged as the evolution of digital bits. A qubit can be represented with different physics systems."

Qubits have the potential to be exponentially faster than normal computers, supercomputers, or servers. McKinsey's study (Ménard et al., 2020) stated that the value of quantum computing will be found by 2025. The main industries are the financial sector, energy and materials, pharmaceuticals, and advanced industry, as shown in Figure 8 (Ménard et al., 2020).

Figure 8: Sectors with value of Quantum Computing



Source: (Ménard et al., 2020)

2.1.4 Data-Driven Technologies

2.1.4.1 Artificial Intelligence

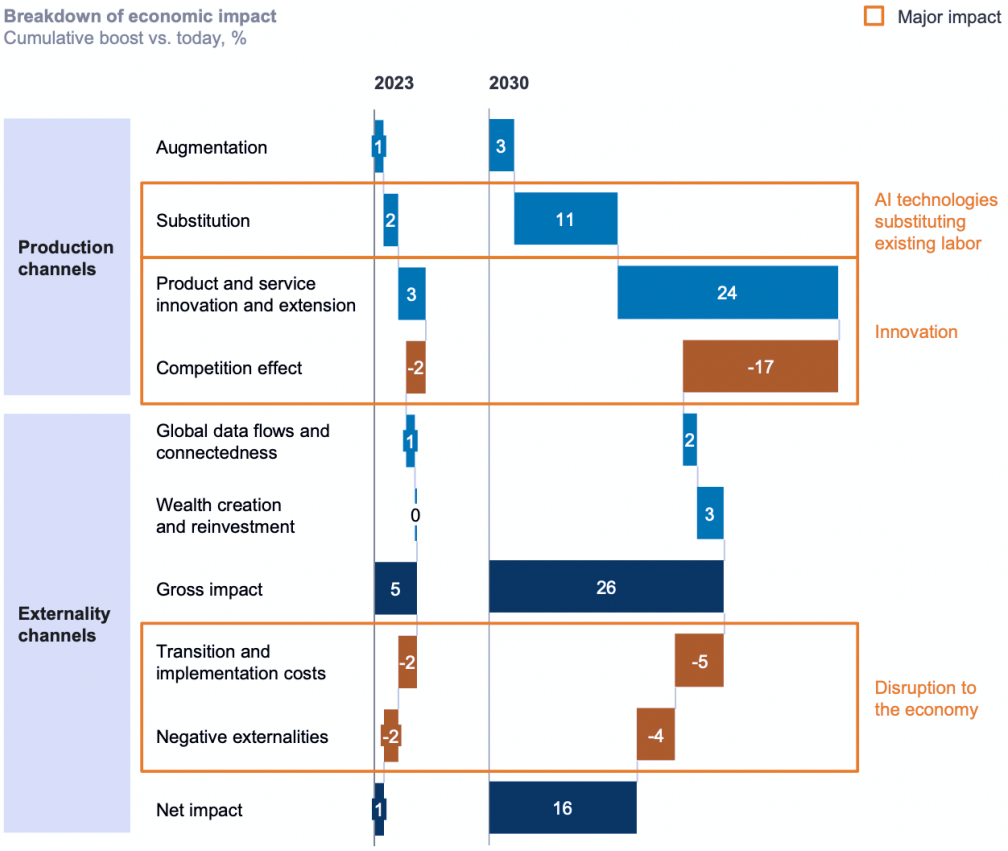
Figure 4 shows AI as one of Gartner's technology trends. Due to rapid technological developments, the definition of AI has changed during the last few years. The aim is to imitate intelligent human behavior, which is possible with computer programs. The system must be able to try various things simultaneously (Kok et al., 2009, p. 271).

One proposal for a summer research project at Dartmouth College was initiated in 1955 by John McCarthy, Marvin Minsky, Nathaniel Rochester, and Claude Shannon. They were the first researchers who mentioned a definition of AI related to simulations of machines with concepts, languages, and abstractions to act intelligently and solve problems (McCarthy et al., 2006, p. 12). Additionally, Ertel (2017, p. 2) stated,

"Artificial intelligence is the study of how to make computers to things in which, at the moment, people are better […] Conversely, this definition makes it clear that machine information processing cannot exist without human cognitive thinking, which is why the boundaries between AI and neuroscience are becoming increasingly blurred these days."

However, AI has not been categorized in a specific research field. Often, it is found in the computer science research field. According to Rost (2018, p. 559), the AI system is trained on vast amounts of past data to make better decisions in complex situations based on human experts in specific knowledge domains. The data sources are human interactions, utterances, and characteristics of various communication services (e.g., Google, Facebook, and Amazon). AI follows the concept of human intelligence, which is not a clearly defined term. The most common definition is the ability to think abstractly, logically, reason, and solve real-world problems. A current topic in AI is how algorithms can learn abstract thinking and reasoning similar to humans or if the learning outcome is a purely statistical correlation, per Holzinger and Mueller (2020, p. 33).

Figure 9: Economic Impact of AI - Seven Dimensions



Source: (McKinsey Global Institute, 2018, p. 19)

McKinsey Global Institute (2018) illustrated the economic impact of AI in seven dimensions (Figure 9). This dissertation focuses on the disruption to the economy, which relates to the transition phase, the costs of implementation, and the negative externalities. Another point is the significant impact of innovation, which relates to the innovation of products and services and the competitive advantage.

2.1.4.2 Big Data Analytics

Another technology trend is BDA, a holistic approach to managing, processing, and analyzing data around different dimensions (e.g., volume, variety, velocity, veracity, and value), according to Yaseen and Obaid (2020, p. 45 f.). The aim is to create valuable insights and measure performance to achieve competitive advantages (Wamba et al., 2017, p. 2). BDA increases information transparency and frequency in the data processed and analyzed. The greater detail in the data enables advanced applications to be driven forward. One scenario for using BDA is the simulation performance on detailed data, which was impossible in the past. Additionally, according to Fasel and Meier (2016, pp. 5-7) and Yaseen and Obaid (2020, p. 45 f.), the enrichment of existing applications is possible, ultimately leading to more accurate decisions in a company. The different dimensions in the BDA are called five Vs, defined as follows:

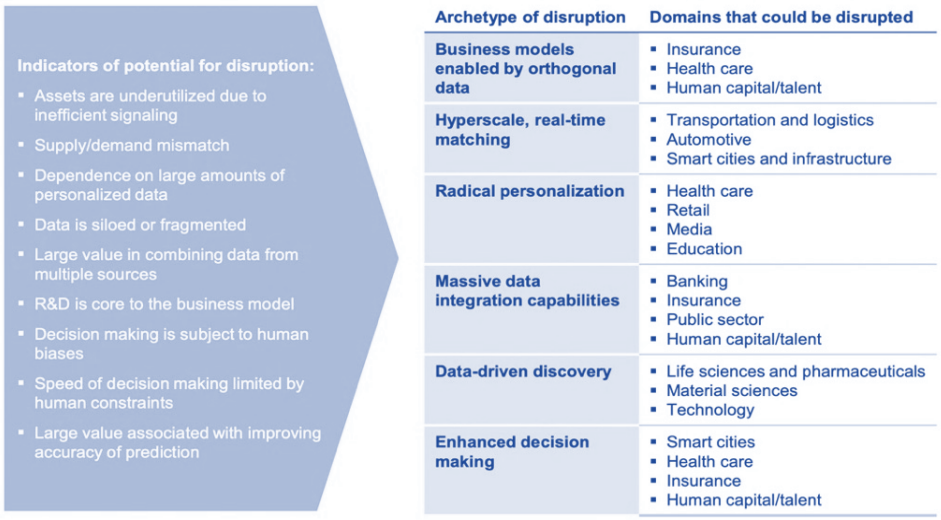
- Volume: large data sets, ranging from terabytes to zettabytes (terabytes = 10^{12} and zettabytes = 10^{21} bytes).
- Variety: encompasses various data types such as structured, semi-structured and unstructured multimedia data like text, graphics, images, audio and video.
- Velocity: involves the speed of data flow, necessitating real-time evaluation and analysis of data streams.
- Value: Big Data applications should enhance a company's value and competitive advantage. Investments target human resources and technical infrastructure to leverage quick value addition.
- Veracity: data quality is often a challenge in BDA projects. Ambiguous or imprecise data requires specific algorithms to assess significance or quality of results. Data volume alone does not guarantee superior evaluation quality.

Moreover, Dubey (2020, p. 9) stated,

"Big Data is information whose scale, differences and unpredictability require new engineering, methods, calculations and investigation to oversee it and concentrate esteem and concealed learning from it."

Hence, BDA describes the analysis of massive data by supercomputers. Retailers especially use the technology to predict product interest to suggest the next best offers. It is not only based on faster computers and larger memories; the advantages of mathematics and computer science help to answer questions for machine analysis. BDA is becoming an automatable learning process. In the past, data sets were isolated from each other in silos. Bringing this data together was hampered by technical barriers and semantic differences. Big data standards make it easier to link previously separate data sets. The idea of a digital twin of things and people is increasingly becoming technically possible. Additionally, connecting devices over long distances is possible and a central controller can collect data using sensors and act on objects worldwide (Pawlik, 2018, pp. 483-487).

Figure 10: Data and Analytics underpin six disruptive Models



Source: (McKinsey Global Institute, 2016, p. 8)

Figure 10 shows the six archetypes and their impact. In each category, new data and data analysis are the key enabler. The main points relevant to the

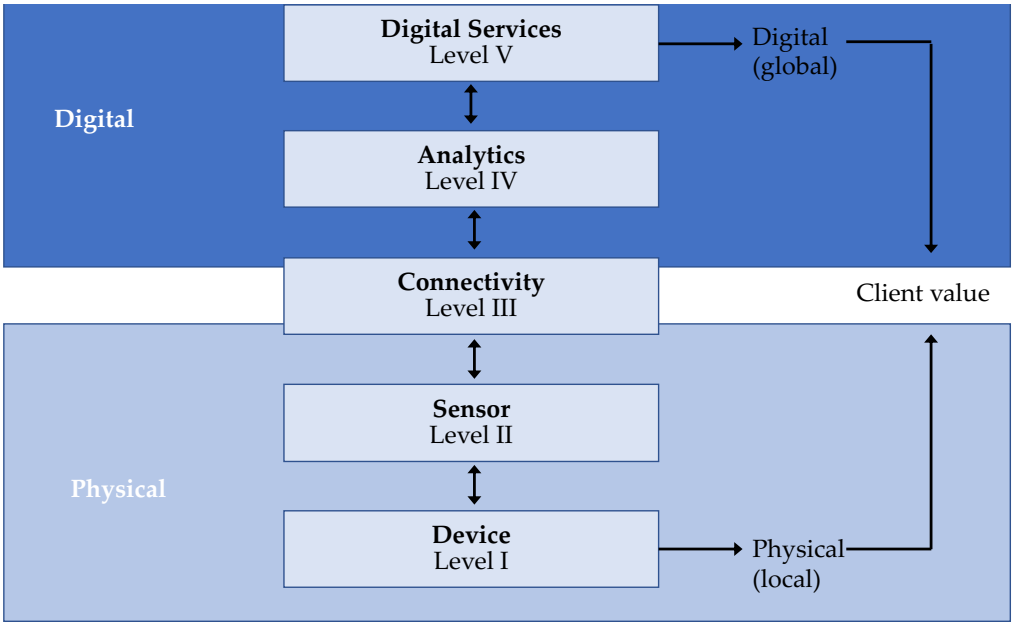
dissertation are that research and development are core to the BM of each company, increasing the speed of decision-making while improving the accuracy of prediction. All these factors influence the BM and the scaling ability of a company.

2.1.4.3 Internet of Things

Digitalization is possible with the IoT, based on networking. Objects and devices are linked with people and organizations based on their own IP addresses for communication purposes. According to Booß et al. (2015, p. 12 f.), this technology is made possible by the widespread provision of wireless networks and the low-cost production of sensors and processors. The connection of the digital world with the physical world creates innovative products and services, which culminate in new BMs based on the newly created connectivity that holds great development potential. As the number of connected devices continues to grow, from 3.8 billion in 2014 to 6.4 billion in 2016 (68 % growth in two years), the development potential of the new BMs will be even greater, and their importance will increase sharply in the future (Statista, 2015).

The IoT vision stands for the integration of physical devices and objects. The practical application is often found in the field of industry 4.0, where modern production facilities and intelligent production controls are used, or in the field of the smart home, where, among other things, intelligent controls for heating and lighting systems can be used. Here, the digitalization of physical objects takes place through the complementation of IT at several stages of the value chain, as can be seen in Figure 11. Level I stands for a physical object / device in the physical part, which provides the first physical benefit for the user. Level II adds a sensor to the object to make local data measurable. Building on this, Level III brings in connectivity (e.g., a connection to the internet in a global context). This level is supplemented by the digital part, in which Level IV stands for the analytics behind it. Information is gathered, archived, categorized, and examined, typically within a cloud-based backend system. The last level, V, links the lower levels and offers the possibility for digital services (e.g., applications). All levels are somewhat dependent on each other and connected bidirectionally. The IoT platform can integrate all levels and create added value for the user / customer (Fleisch et al., 2015, pp. 445-447).

Figure 11: Stages of Value Creation in the Context of IoT



Source: Own depiction according to (Fleisch et al., 2015, p. 447)

According to Fleisch et al. (2015, p. 449 f.), the development of IoT platforms impressively shows that it is not exclusively about the conception of new products or services but also in the context of BMs. They serve not only as a reference example but as an entry point for transformation and a basis for innovation to realize competitive advantages.

2.2 IT Provider Sector

2.2.1 Sales Channels

Companies are facing challenges in their economic and technological environments. Business units and the IT department must achieve the same goals in the competitive business world. The close coordination between IT functions and business experts becomes a critical differentiator (Chang et al., 2021, p. 212). Ecosystems around corporations are more crucial than ever to reduce costs, secure a position in the market, and establish a competitive advantage (Leminen et al., 2012, p. 15).

Gabrielsson et al. (2002, pp. 73-76) stated that ecosystems within the IT industry include various sales channels. First, it is necessary to analyze if an IT company focuses on customers who are consumers or business companies. Hence, there is the first split between B2C and B2B. Furthermore, Gabrielsson et al. (2002, p. 74) mentioned,

"The development of sales channels in the PC industry has been turbulent since the beginning of the 1980s, when the leading companies started to reorganize their single channels to form new, multiple channels. Earlier PC companies had used a single either direct or indirect channel."

A value-added reseller acts within the supply chain as a retailer of products (software and hardware solutions). In most cases, the primary focus is on B2B. In limited cases, resellers serve only for one specific niche area. However, they try to deliver end-to-end IT solutions with the help of their expertise and vendor accreditations, per Gupta et al. (2016, pp. 110-118). Thus, they work closely with different IT vendors (e.g., IBM, Microsoft, Cisco, and Oracle). All resellers aim to deliver the best IT solution for their clients with the combined knowledge of the different IT vendors. For the end client, the reseller acts as a trusted advisor with advice and guidance (Simpson et al., 2001, p. 119 f.), depending on the company size and where and how the reseller is active. Basic resellers focus on local markets. Basic resellers focus on local markets and SMBs. Corporate resellers are larger companies targeting larger corporates and public sector clients. Additionally, value-added hardware resellers specialize in complex products, for example, high-

performance clusters and server landscapes, including additional services (e.g., design and planning phases; Ghezzi and Balocco, 2016, p. 4740).

Jintaphanu (1998, p. 4) highlighted that support providers offer more services than traditional resellers, commonly based on special contracts with IT vendors, where terms and conditions are agreed upon. The provider who sells the IT solution must deliver first- and second-level support for the end client. Thus, the relationship with the client grows closer because the support provider is the primary contact person for the client.

ISVs develop and sell software applications to solve specific business challenges. Moreover, they are responsible for installing and managing software applications. Large ISVs include SAP, Oracle, Salesforce, and Software AG. Smaller ISVs are known for their deep industry knowledge used in niche areas of vertical industries (Krisdaphongs, 2004, p. 48 f.). According to Ven and Mannaert (2008, p. 991), in some cases, the software is based on open source software (OSS), or the ISV may be integrating well-known software solutions from large vendors (e.g., IBM, Microsoft, and SAP) in their own solution to sell it as a package (Naous et al., 2017, p. 497 f.).

MSPs are the next evolution of the support provider. They deliver services (e.g., networks, applications, and security) on the client's premises, including support and administration. Traditionally, the definition is combined with infrastructure and device services. The most known cases offer servers or storage capabilities through their own data center to end clients and handle management, maintenance, and support for customers (Smith and Kumar, 2004, p. 984).

Besides various sales channels, there are different ways to work with IT providers. In the next section, ITO and the MSP model are key to understanding this dissertation’s focus.

2.2.2 *IT Outsourcing*

2.2.2.1 Principles and Classification

Digitalization is hardly manageable from a company’s perspective. Therefore, most search for external help through IT providers (Gründer, 2021, p. 45). One option is ITO, a method to improve a company's focus on its core

business and efficiency. It is a traditional economic decision related to the "make or buy" question. A company decides to use a third party for specific products or services. Thus, it is a transfer from the production to a third-party provider. With this approach, they can concentrate on their core business and work closely with third-party provider experts, outsourcing IT services and managing business applications (Koenning et al., 2019, p. 79).

The literature has multiple definitions of ITO. For example, Gründer (2021, p. 45 f.) analyzed that in the narrow view, the description of ITO relates to the outsourcing of IT tasks with asset transfer (e.g., hardware, licenses, data centers, and staff transitions to the IT provider (§ 613 a BGB)). This approach is not often used in practice because it includes commitments and expenses for the service provider. In contrast, the broader view of ITO defines outsourcing IT tasks or an external purchase of IT services like infrastructure, software developments, and tests, including special project tasks without a purchase transaction or staff transition. This approach relates to the traditional economic question of "make or buy." Gründer (2021, pp. 64-69) divided the IT service market into three segments for outsourcing services: professional services, system integration, and IT infrastructure. Professional services include IT consulting, development, design, programming, and training. The MSP can support software applications or handle complete business processes for the client. The typical contract term is usually up to five years. System integration comprises complex project-related services in which the service provider, as the general contractor, bears the financial responsibility for the project results. Additionally, network operation and large-scale system applications are examples of this segment. Because of the complex projects within this segment, the general contract term is between five and ten years. IT infrastructure is, for example, the operation and management of a data center. The service provider assumes long-term financial responsibility as a general contractor.

Furthermore, Lee et al. (2008, p. 145) stated that an outsourcing service provider can offer cross-segment service while overseeing the operational responsibility for the entire IT infrastructure of a company. Most of these relationships are long-term, built on trust, and have a project volume of several million euros. In addition, Gottschalk and Solli-Sæther (2005, p. 685) mentioned

that once a company knows ITO capabilities, it should decide whether to use the services or stay in-house. The reasons for outsourcing are company-specific. However, empirical studies have identified factors to help to finalize the outsourcing decision.

Zuehlke and Roevekamp (2004, p. 6) focused more on the company's core competencies dominating the strategic level. In a strategy-oriented view, individual IT tasks are not included in a company's core competencies. Regarding the service provided by the IT department, the decision-makers have quality and / or cost concerns reflected in the performance-oriented view. From a financial point of view, ITO can be worthwhile. The contract scope defines what is included in the ITO to a service provider. The outsourcing areas can be calculated as usage-dependent, while the company's previous fixed costs become variable. In the human resources-oriented (HR) view, it is difficult to find highly skilled personally for the specific demand of IT specialists, because the demand is higher than the current available resources. Additionally, it is even more difficult if a company does not have a reputation for technical competence. Furthermore, keeping up with current technical developments can be challenging. Overall, Table 6 summarizes the opportunities and challenges of ITO.

Table 6: Opportunities and Threats of IT Outsourcing

Area	Opportunities	Threats
Strategy	- Focus on core competencies - Increase flexibility and innovation	- Different corporate cultures - Loss of future competencies - Long-term commitment
Performance	- Access to external knowledge and know-how - Optimized services and clear responsibilities	- Data privacy - Coordination effort - Monitoring Service Level Agreements (SLAs)
Financial	- Change: fixed to variable costs - Reduction of committed capital	- Administrative efforts - Migration and infrastructure costs

Area	Opportunities	Threats
	- Increase of liquid funds	
HR	- Access to external know-how	- Emotional issues for employees

Source: Own depiction according to (Zuehlke and Roevekamp, 2004, pp. 6-8)

A corporate decision for outsourcing is not simple and is not only based on financial aspects. The aim is to maximize the outcome and consider the business strategy, focusing on the core competencies, per Weinrauch and Fang (2021, p. 25). However, employees relate to outsourcing job cuts and losses (Schewe and Kett, 2007, p. 2 f.). If a company shows poor financial results, the solution should often be ITO. However, there is a long list of other strategic reasons, including the intention of outsourcing and the related strategic effects (Lacity et al., 2009, p. 133). One rationale of ITO is cost reduction and efficiency improvements. The main objective is to save money, so one option could be to reduce headcounts (Fisher et al., 2008, p. 165 f.).

2.2.2.2 Dimensions of ITO

A model for managing the IT function is essential. The aim is to establish competitive advantages for the company (Saitta and Fjermestad, 2006, p. 8). Through collaborations with external business partners, organizations can attain elevated levels of IT proficiency, enabling them to devote their attention to their core business objectives. For example, in Saitta and Fjermestad's (2006) study of U.S. and Japanese companies, ITO played a significant role in gaining a competitive advantage. These authors demonstrated that companies gained shorter cycle times, lower development costs, and competitive advantages by having access to larger technology pools, offering the opportunity to develop products that would not have been possible in-house (Saitta and Fjermestad, 2006, p. 9). Krcmar (2003, p. 32) described ITO as a cycle. In his view, there is an interaction between corporate strategy and IT in the sense that IT receives impulses from the business environment and adjusts them to the company. This way, an IT strategy can be derived from the previously determined corporate strategy.

On the other hand, innovative corporate strategies are also developed by IT capacities and any previous reorganization measures. In this context, IT is often assigned as an enabler, and corporate strategy is referred to as a driver for IT (Lipsky, 2011, p. 4). Additionally, Lipsky (2011, p. 5) mentioned that this knowledge and assessment have influenced company ITO decisions. Increasingly, the outsourcing of the entire IT department, including the applications and platforms for development and the employees, has distanced from a pure physical infrastructure as a data center. In addition, individual areas were thoroughly analyzed to differentiate between various competencies in a more targeted manner and avoid wrong outsourcing decisions. It is important to stress that core competencies remain within the company while peripheral or complementary competencies are organized outside the company as far as possible.

As a result, quality increases in the core business, and flexibility can be achieved via minimized costs and risk factors. For this analysis, IT is divided into certain separate business processes to examine a sustainable competitive advantage. Strategically subordinate activities should be outsourced utilizing contracts (Lipsky, 2011, p. 5). Other ITO management models could be applied to current ITO issues. For instance, Saitta and Fjermestad (2006, pp. 8-10) proposed an IT framework to help information systems managers in decision-making, problem-solving, and determining technology's benefits. The model's components included contracts, infrastructure, quality, confidentiality, and culture. Initially, new technological possibilities were the driver for new BMs, but a corporate strategy became the focus with the increasing maturity of the technologies over time. However, infrastructure outsourcing was increasingly developed into a background topic focusing on business process outsourcing (BPO) and strategic consulting. According to Dittrich and Braun (2004, p. 3), there are other dimensions (e.g., the number of service providers, location, the scope of financial participation, the level of performance, and time and strategic aspects) that differ in intensity or characteristics, as summarized in Table 7.

Table 7: Dimensions of IT Outsourcing

Dimension	Expression
Location	- Global - Offshore - Nearshore - Onshore - On-site sourcing
Scope of financial participation	- Internal outsourcing - External outsourcing - Joint venture
Scope of the business model	- Infrastructure - Application - Business process - Knowledge process
Level of external performance	- Total outsourcing - Selective outsourcing - Partial outsourcing - Total insourcing
Number of service providers	- Single sourcing - Double sourcing - Multi sourcing
Time aspect	- Insourcing - Outsourcing
Strategic aspect	- Co-sourcing - Transitional outsourcing - Transformational outsourcing - Value-added outsourcing

Source: Own depiction according to (Compusafe, 2017)

The location dimension describes the geographical location of the outsourcing provider related to its customers, which can be in a distant foreign country (offshore), in a nearer foreign country (nearshore), inland (onshore), or on the company's premises (on-site). Hence, not the place but the operator changes. A combination of the above characteristics is described as global sourcing. The location dimension is primarily aimed at wage cost arbitrage compared to the outsourcing company to save costs (Oshri et al., 2009, pp. 4-6). Concerning the scope of financial participation, a distinction is made between external (in the narrower sense) and internal outsourcing (in the broader sense) and a combination of both (joint venture; Hofmann, 2010, p. 173). In the case of internal outsourcing,

the service is obtained via the group's internal market. The degree of the external service relationship describes the intensity of the outsourcing. A distinction is made between total and partial outsourcing to a provider. Total insourcing means complete outsourcing to a provider within the company.

In addition, Lipsky (2011, p. 7 f.) identified a partial outsourcing of special parts of an area. The primary goal here is acquiring knowledge, for example, for a software introduction by a third company. Time considers whether an area has already been outsourced (outsourcing or insourcing with the task assignment to an external or internal provider) and, if necessary, reintegrated (backsourcing; Compusafe, 2017). The dimension of the scope of the BMs includes all sub-areas (e.g., infrastructure or complete business processes) that can be outsourced in a company (Lipsky, 2011, p. 8). The strategic aspect, on the other hand, relates less to various BMs but rather considers strategic motives leading to an outsourcing decision, for example, expanding competencies (value-added outsourcing), replacing old technologies (transitory outsourcing), billing for outsourcing in a business-process-oriented manner (co-sourcing), supplementing classic outsourcing with consulting services, and transforming business processes (transformational outsourcing; Gründer, 2021, pp. 43-50).

Further outsourcing models can be differentiated based on the number of service providers. Single sourcing represents classic outsourcing with one service provider. With multi-sourcing, an area is completely outsourced, but individual activities within this area are combined into specific services, which in turn are created by different providers. Lipsky (2011, p. 9) stated that they can be organized (e.g., on, near, offshore, or global). The discussed outsourcing models indicate that the traditional 'make or buy' decision is at times evolving into a 'make, buy or share' decision. Joint ventures have already been agreed upon to create an alternative to pure external and internal outsourcing to organize complementary skills more sensibly (Lipsky, 2011, pp. 9-12). Overall, this section on ITO demonstrates the following advantages, according to Heckmann and Zerbst (2019, p. 24 f.):

- Increasing the quality of data processing and the level of security is possible if a specialized service provider is used; even high security standards can be maintained if a provider specializes in them, which can compensate for the shortage of skilled workers.
- The maintenance effort for software and hardware can be reduced.

- Recourse to the know-how of specialized providers can lead to personnel savings.
- ITO makes creating a project-related reference to IT services possible while reducing operational risks.
- Economic advantages include procuring IT infrastructures in a demand-oriented, flexible, and cost-saving manner. While there is usually a constant need in the recurring core area of administrative activity (especially for specialist applications and workplace licenses), flexible usage models can lead to economic advantages, especially in peripheral areas of administrative activity.
- By using a specialized provider, investment and operating costs can be reduced (compared to an in-house solution).
- Fixed costs can be converted into variable costs.
- By using distributed resources, redundancy, and availability, the quality of data processing can be increased simultaneously.

However, there are also gaps to consider. Any form of ITO involves various risks. So-called cloud-specific risks can be added to the classic risks. Three categories were differentiated by Heckmann and Zerbst (2019, p. 25 f.), who stated that outsourcing data and services could primarily be affected by legal, organizational, and technical risks. Legal risks are primarily associated with questions of data protection and data security. Aspects of data security relate primarily to ensuring the confidentiality, integrity, availability, and resilience of the systems. In addition, when using cloud computing applications, data protection principles such as data minimization and processing transparency must also be observed. Above all, the virtualization of IT systems jeopardizes the protection goal of confidentiality. According to the current legal situation, only a few regulations consider the special features of ITO and cloud computing (however, no legal regulations expressly prohibit them). Legal risks also include legal access opportunities for security authorities in third countries. The organizational risks include provider dependency or the so-called lock-in effect: a user's factual dependence on a provider's services. The service is usually so specific (and does not meet recognized standards) that there are almost no comparable services on the market. Such a dependency can be relevant if, for example, large

databases are exported from the provider's sphere or transferred to another service provider as part of a provider change due to termination. Misleading data security concepts and SLAs can cause organizational risks.

The European Agency for Network and Information Security (ENISA) lists the exhaustion of IT resources and the vulnerability of cloud technology as technical risks. The reliability of the network infrastructure generally also plays a key role. A service provider typically uses automated procedures to manage its customers' IT resources. Availability bottlenecks or weaknesses in security systems cannot be ruled out if the IT service provider does not take sufficient measures to ensure data security. Virtual machines create new attack vectors (e.g., in the context of multi-client capability). A compilation of the most important technical risks should be considered in cloud computing (e.g., cloud environment or network availability, risks of failure, and general aspects of data security; Heckmann and Zerbst, 2019, p. 27).

2.2.3 Managed Service Provider

2.2.3.1 Characteristics and Dynamics

The term "managed service provider" originated in the 1990s with the definition of ASPs as a type of outsourcing (Riedl, 2005, p. 2). Because of the wide range of products and services, there is not just one definition in the literature. In May 1999, the ASP Industry Consortium explained (Focacci et al., 2013, p. 2),

"ASPs are companies that host, deliver and manage computer software applications and services from remote data centers to multiple users across a Wide Area Network (WAN) via the Internet or other private dedicated networks."

Hence, MSPs provide applications, infrastructure, and the workforce for support services for a fee. The company using the MSP services must pay a monthly rent for the services (e.g., per user or quantity of transactions). Table 8 offers verbatim examples of possible definitions.

Table 8: Definitions of the term "Application Service Provider"

Authors	Definitions
Anderson et al., (2009, p. 91)	"[...] ASPs provide a contractual service offering to deploy, host, manage and rent access to an application from a centrally managed facility. Such hosting providers are responsible for either directly or indirectly providing all the specific activities and expertise aimed at managing a software application or set of applications."
Susarla et al., (2003, p. 94)	"An ASP […] renders Software-as-a-Service, providing applications and the IT infrastructure and support services to customers on a subscription basis […] and bears the responsibility for efficient provision of these services."
Stone, (2000, p. 261)	"Any for profit company which provides aggregated information technology resources to subscribers / clients remotely via the Internet or other networked arrangements."

Source: Own depiction according to (Anderson et al., 2009, p. 91); (Susarla et al., 2003, p. 94); (Stone, 2000, p. 261)

The aim of MSPs is not selling the technology but renting the services they deliver online to their clients. They deliver the possibility to the clients to outsource IT-relevant topics to be managed remotely in a controlled way outside the customers' IT infrastructure. Table 9 defines the different characteristics of an MSP. Managed IT services encompass a range of IT activities an MSP provides its clients. An MSP takes responsibility for clients' IT needs, which can be performed remotely, on site, or a combination. These services can include network monitoring, server administration, database and application support, and various enterprise IT assets. The scope of services is determined by the commercial agreement between the MSP and the customer, aiming to transfer the IT asset management responsibility to the MSP. A maturity model for MSPs is required to assess their delivery capability and maturity. The services provided by MSPs can vary in complexity, ranging from basic support to advanced problem-solving. Common models include the remote management of servers, desktops, mobile devices, and application support. The level of service is defined by SLAs, which measure the effectiveness and accuracy of the services provided, often influencing the pricing of the services (Wattal, 2020, p. 1 f.).

Table 9: Characteristics of ASPs

Characteristic	Description
Application-centric	Access and management of an application
Renting application access	Offer application environment, MSP owns software
Centrally managed	Management of a central location (on MSP's site)
One-to-many offerings	Offer standardized packages with a subscription model
Delivering on the contract	Contract contains SLAs and information about provision

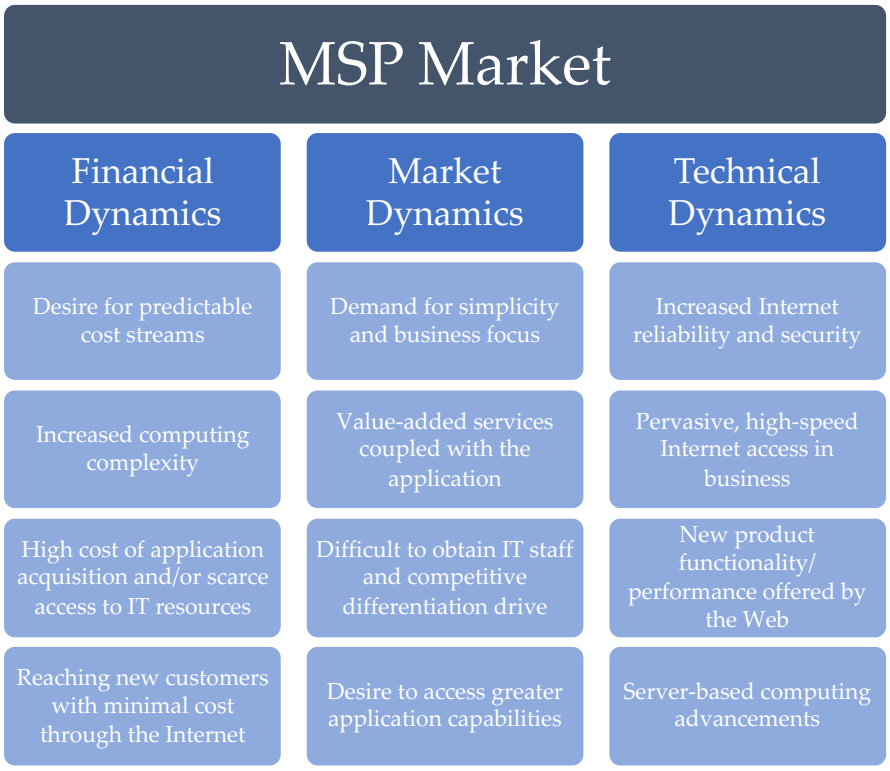
Source: Own depiction according to (Focacci et al., 2013, p. 3)

There are different kinds of services included in the BMs of MSPs. As a starting point, they operate and manage the software of the needed application and make it available to the client. Furthermore, they are responsible for maintaining the servers. Moreover, they need a suitable billing and user management system to work in a multi-tenant environment with different clients. One important factor is that the service provider has a highly skilled and educated workforce to satisfy client needs (Focacci et al., 2013, p. 6 f.).

MSPs focus on SMBs[2] because they create solutions / applications for them to save time and costs so that the SMBs can concentrate on their core businesses. Some MSPs do not create a general service / application acceptable for almost every company but specialize in one specific area and develop an appropriate service. The owner of the software licenses is always the MSP, not the end customer. The end customer uses a rent model from the MSP and works with the specific service the MSP provides. Since the MSP market was established, three dynamics have contributed to its growth (Focacci et al., 2013, p. 8), illustrated in Figure 12.

[2] Institut für Mittelstandsforschung (IFM) 2017, defines SMBs by referring to quantitative criteria, e.g., annual turnover (≤ 50 million Euro) and the number of employees (< 500 employees).

Figure 12: Dynamics of the MSP Market



Source: Own depiction according to (Focacci et al., 2013, p. 8)

First are the financial aspects. Because of the increasing complexity of IT and the constant development of new technology, it is worthwhile for SMBs to use the service of MSPs instead of investing every time in new IT infrastructure and new software licenses. In addition, it is helpful for the customers because they have a predictable cost stream for the following years. MSPs use the market to reach new customers and show an attractive service model. There are also the market dynamics. SMBs want to focus on their primary businesses and implement simplicity while using value-added services from MSPs. Hence, they do not need more IT staff and can differentiate themselves from their competing business firms. There are also the market dynamics. They can use a greater application capability if they find an MSP expert in their industry. Finally, there are technical dynamics. With the internet, there are many chances for companies. MSPs use the reliability

and security of the internet to offer new product functionality and high-speed access to the solution / application (Focacci et al., 2013, pp. 8-12).

In the early 2000s, the following services were provided by MSPs: applications for communication, financial functions, e-commerce platforms, CRM applications, and solutions for education and training. Therefore, they represent the following sectors of applications (Focacci et al., 2013, p. 12):

- Personal: Office solutions, like Microsoft Office (B2B and B2C sector);
- Collaborative: E-mail, conferencing, and chat possibilities;
- ERP: Enterprise resource planning, facility management, and accounting;
- Vertical: Industry-specific solutions, (e.g., a patient billing system for the health-care industry);
- Analytics: Solutions, that analyze a business problem (e.g., website tracking, and risk analyses).

According to Gründer (2021, p. 71), the MSP business supports disruptive innovation in companies with a new delivery, implementation, and pricing model. Service providers can influence positive consequences for companies to employ technology in the future, filling market gaps and new ways of thinking, including the necessary know-how. However, there are also challenges. One concern is the unpredictability of the market development in the future. Because of digitalization and the rapid speed in the IT industry, companies are concerned about relying on the wrong service provider. There are vast differences between the providers, and the selection is not straightforward, depending on the important factors for the company. Furthermore, companies are concerned about performance, data reliability, privacy, and security (Strecker, 2021, p. 80 f.).

SMBs outsource non-core functions so that the internal IT staff can focus on tactical and strategic business issues. This outsourcing allows the IT department more flexibility and available resources while relieving pressure. IT vendors like Microsoft, HP, and IBM support the BMs of MSPs and strengthen partnerships between hosting providers, resellers, and MSPs. Moreover, MSPs often have a multinational scope as prominent IT vendors (Focacci et al., 2013, p. 20).

In 2001, more than 1,600 MSPs were active in the US. Nowadays, there are more than 20,000 successful MSPs in the North American market (Acronis, 2023). In the first wave of MSPs, the following core functions are the core of their business:

data centers, networks, infrastructure, software, and virtual private networks (VPNs; Focacci et al., 2013, p. 23). The tasks of ASPs have a wide range, so they use many partner relationships with other vendors who are experts in a specific area to meet the end customer's requirements. MSPs differ from traditional IT service providers in four key ways. Emerge Digital (2023) stated that recurring services are crucial instead of one-time benefits. Classic IT service providers usually fix a one-off problem (e.g., a server failure) and issue a one-off invoice, depending on the amount of the service rendered. In contrast, managed services are recurring services. For example, an MSP handles a company's backup tasks every month. However, a precise distinction must be made. Under certain conditions, classic service providers also offer recurring services (e.g., technical support for hardware sold). However, this service is not managed, and no internal IT function is outsourced. Conversely, it may be argued that managed services are a subscription model with a previously negotiated monthly flat rate. In reality, managed services are composed of different modules (e.g., the selected storage or availability class) billed at a recurring flat rate. At the same time, consumption-related components such as central processing units (CPUs) and random-access memory (RAM) utilization are billed according to usage (e.g., not as a flat rate). The second important step is to reflect preventive against reactive services (e.g., the differences in the service mindset). The MSP takes care of the company with a preventive mindset since it is in the MSP's interest that all systems are optimally adjusted at all times. The MSP saves time and effort by solving problems before they build up. Classic IT service providers do not necessarily have this interest, so their concept is reactive: only used when there is a problem. Third, there is the differentiation between remote and on-site services. Classic IT service providers usually work on-site at the company's premises, while MSPs mainly provide their services remotely, often using cloud technologies. Public, private, and hybrid cloud models are used. However, there are also remote solutions that do not require a cloud. Some providers offer dedicated infrastructures or support customer systems via remote monitoring and management (RMM) consoles (e.g., remote control software). Fourth, there are two BMs: one is focused on manual work and the other on automation. The classic service provider is predominantly a manufacturing company that solves specific problems. In contrast, BMs of MSPs can be easily

scaled, supporting several customers via the same platform while automating standard services such as installing updates and patches (Emerge Digital, 2023).

Thus, MSPs deliver a defined set of technology solutions or services to their clients with a pay-as-you-go model (IBM, 2013, p. 2). Consequently, MSPs are predominantly sought after by customers aiming to leverage cloud technologies, lacking the internal IT expertise, resources, and time. In the present scenario, MSPs must establish distinct competitive differentiators to achieve business objectives and enhance market reach. Additionally, this approach requires transitioning from the conventional managed or hosted IT approach to a cloud services delivery model. MSPs must adopt a structured approach to implement an all-encompassing suite of solutions for furnishing an extensive range of services, thereby facilitating business expansion. Solutions frameworks include the following items according to IBM (2013, pp. 5-7), illustrated in Table 10.

Table 10: Solution Framework

Item	Solution
Service enablement platform	The platform serves as a robust and accessible base, encompassing essential infrastructure components such as networks, servers, storage and virtualization layers. It also incorporates infrastructure management functionalities, encompassing service provisioning, monitoring and usage-based accounting.
Managed or hosted services	MSPs provide these conventional services within either dedicated or shared environments.
Cloud services	Cloud computing generates substantial novel revenue channels and enhances customer relationships by diversifying the MSPs' range of services. This extended portfolio can encompass functionalities such as productivity enhancements, testing and development facilities, infrastructure provisioning and business process services.

Source: Own depiction according to (IBM 2013, pp. 5-7)

A disadvantage of MSPs is that the relocation of IT services can create dependency on the service provider. In the case of business-critical applications and services in particular, this relocation can pose a risk if the provider does not provide the services as agreed. Due to possible long contract terms, the company is

forced to continue to obtain the services from the provider or bear the costs despite commissioning another provider (IBM, 2013, pp. 13-16).

2.2.3.2 Service Portfolio

Technical sources also distinguish the forms of cloud computing. Since the term "cloud computing" is structured quite complexly, different definitions have been used. NIST captures the most important terms and also differentiates between the five most important forms (Borges and Werners, 2018, p. 14):

- On-demand self-service: Computing resources are automatically provisioned when needed, eliminating the need for vendor interactions.
- Broad network access: Access to resources via a network is made possible by standard technologies, enabling a large heterogeneity of clients.
- Resource pooling: Resources are made available to multiple clients in parallel, also referred to as a mandate in the technical sources. Various physical resources are allocated or shared among consumers as needed. The user has no control and no knowledge of the exact physical location of his resources (Borges and Werners, 2018, p. 14).
- Rapid elasticity: Resources are allocated elastically or, in a broader sense, variably and, in some cases, automatically, according to demand. The scope of the service is scalable and can be adapted to demand at any time (Borges and Werners, 2018, p. 15).
- Measured service allows the system to control resources and optimize their use. Monitoring, control, and reporting to the provider and the user are questioned (Borges and Werners, 2018, p. 15).

Concerning service provision, a distinction is made between four MSP provision models, which differ depending on the organizational form:

- In the case of the private cloud, the resources are made available to a single organization. The main advantage of this model is increased security, especially when the provider and the user belong to the same organization. The private cloud is also talked about when an external provider makes the resources available exclusively to a customer (Borges and Werners, 2018, p. 16).
- In the case of the community cloud, the resources are shared by several users with similar requirements to the solution.

- The public cloud offers its services to the public.
- With hybrid clouds, different mixed forms of the offers are possible.

Cloud computing offers many advantages, particularly economic, for companies. The possibility of accessing services via the internet lowers the market entry barriers in many areas, reducing investment costs, which is particularly relevant for SMBs (Borges and Werners, 2018, p. 17). At the infrastructure level, the providers offer basic services such as computing, data storage, and, in some cases, communication links, often referred to as hardware-as-a-service (HaaS). This virtualized hardware service can realize additional layers of software-as-a-service (SaaS) and platform-as-a-service (PaaS), which is not mandatory. The users can also use this basic service for their tasks (Bedner, 2012, p. 29). In general, infrastructure-as-a-service (IaaS) users can fully access the virtual hardware and install the applications themselves. However, the cloud provider is not liable for any damage in this case. IaaS is the lowest level in the architecture of IT cloud outsourcing (Bedner, 2012, p. 29). This level allows access to scalable computing and network capacities and big data storage. These services are provided with a high degree of automation and digitalization, whereby the user can usually choose different operating systems (Münzl et al., 2015, p. 10).

Notably, IaaS service is according to the user's needs under personal responsibility. The main advantage of this approach is that the user does not have to worry about whether there is enough hardware and network capacity and where the physical infrastructure needs to be installed. Within the framework of contractual agreements, the user is always provided with the necessary services and IT resources. CPU memory consumption or compute power, gigabytes per time unit or storage, and the data transfer volume or network are measured variables at the IaaS level. Amazon services exemplify IaaS in the B2B sector (Münzl et al., 2015, p. 10).

PaaS means the provision of software developments by providers. This approach is often referred to as a programming environment, with the possibility of executing the developed software on the provider computers or execution environment. PaaS is relevant for independent software developers, IT companies, and IT departments (Münzl et al., 2015, p. 10). The main advantage is that there is no effort for the developer to create a software development environment, so the provider only has to do it once. Moreover, unlike IaaS, users do not need to

administrate the base servers since the platform providers take over these functions. This level offers a standardized environment with optimized middleware and database services for portal and application development. Integration, access control, security, synchronization, and data management are offered as additional services. Thus, the PaaS approach represents a productive level for developing further SaaS services. Examples of this approach include Microsoft's Azure, Google's App Engine, SAP's BusinessByDesign Studio, and Amazon's Beanstalk (Münzl et al., 2015, p. 11). PaaS service is strategic for the big providers because they can act as so-called germ cells within the framework of cloud ecosystems. The idea is that several independent software producers gather around a specific development platform to develop their own software and SaaS solutions that often complement the portfolio of the PaaS provider. The more partners the platform provider has, the more economical and stronger its market position is. This possibility is now widely used and further developed by providers (Bedner, 2012, p. 30).

SaaS is particularly important for companies, authorities, and private end users. The provider makes the application software available online as a service by billing the customer according to the actual use time. This approach represents a kind of software rental. The software applications are either not installed locally or only accessed via a web browser. Some programs can be installed locally, but the main components can only be accessed via the network. Thus, this software does not need to be licensed and maintained as these functions belong to the provider. In addition, the latest version of the software is always offered to the user. The user does not acquire individual user rights but shares them with others in a multi-tenancy approach. All users can access the same software version (Bedner, 2012, p. 31).

The high scalability with "on-demand self-service" adapts the services quickly and flexibly to the company's needs. Compared to classic IT solutions, cloud computing offers are characterized by increased efficiency since the physical machines used have significantly higher usage rates. Server virtualization achieves improved utilization of real resources. In addition, there is also the possibility of increased scaling effects so that the user perceives the available resources as practically unlimited (Borges and Werners, 2018, p. 18). Security is achieved through the higher specialization and greater expertise of the providers. The

European Network and Information Security Agency ENISA describes cloud computing as questionable due to the high concentration of users and data as well as the increasing use in sensitive sectors such as finance, health, and insurance. However, technical sources have shown that there is still significant potential to increase the security of cloud solutions for companies by applying appropriate measures (Borges and Werners, 2018, pp. 18-20).

An MSP provides managed services on behalf of a company. The company transfers recurring IT services to the provider to work more efficiently and economically. Possible services can be network services, applications, monitoring, storage, and security services. The scope, type, and quality of the services provided are precisely defined in advance and precisely coordinated between the company and the provider with the help of SLAs (Luber and Karlstetter, 2018). SLAs are usually mutually agreed upon before the contract is signed and form the basis for measuring and evaluating the provision of services. Thanks to managed services, companies can concentrate more on their core business while not investing resources in IT services (Luber and Karlstetter, 2018). Managed services differ from outsourcing, as only sub-areas, not complete IT responsibilities and infrastructures, are outsourced to a service provider.

Managed services differ from classic ITO concerning the outsourcing of complete IT tasks or areas, and staff or entire IT departments are often affected by the outsourcing measures. Instead, managed services transfer specific sub-areas and IT services as precisely defined in advance on a recurring basis based on the SLAs. The sovereignty over the overall IT structure and processes remains with the customer (Luber and Karlstetter, 2018).

2.2.3.3 Delimitation to ITO

The MSP BM can help to solve threats in the ITO. First, using an MSP can increase competitiveness. In the outsourcing model, there are risks of losing flexibility and independence with inadequate contract conditions and a long contract term. The approach of the MSP is short-term contracts, including the rapid distribution of the standard IT solution (Zuehlke and Roevekamp, 2004, pp. 3–6). Moreover, MSPs support companies by guiding them through the path of digital transformation. With simple pricing models and a transparent price policy, SMBs can easily access tools to bring forward the digital transformation into the

corporation. Additionally, MSPs are specialized with more industry know-how to support the processes in a company and create security concepts on the specific demands of the industry sector (Lee et al., 2012, pp. 550-558).

The value chain of an MSP contains five elements, as illustrated in Figure 13. The starting point within the value chain is the network capability, which should support a reliable data transfer with predictable network performance. The second is finding suitable hardware and a software platform where the MSP can provide services. Afterward, there is the application layer for the software. The application data must be portable between the MSP services and the application architecture. The data center operations include the application software's capacity, availability, performance management, and administration. The layer service contains the capabilities of consulting, system integration services, and management know-how to integrate the various layers and embed the service in the corporate IT environment. However, MSPs do not aim to have all the capabilities because the service provider can work with business partners to support the seamless integration on the corporate side (Riedl, 2005, pp. 158–165).

Figure 13: Value chain of MSP Business Model

Source: Own depiction according to (Riedl, 2005, pp. 158-165.)

Section 2.2.2 named the relevant evaluation areas of ITO (Table 6), compared to the MSP model here. From a strategic point of view, the MSP model is similar to ITO because the company (e.g., the service user) can concentrate on core competencies while increasing flexibility and innovation. However, there is also a huge risk because there is a dependency on an external company to deliver the IT infrastructure or specific solutions. In the past, complex software solutions were targeted at large companies, but with the MSP model, more SMBs are in focus for these complex solutions. The monthly rent (or the pay-per-use option) makes this even more attractive for smaller companies. Thus, the strategic "make or buy" question is also relevant for SMBs (Seltsikas and Brown, 2006, pp. 311–313).

The performance area shows that MSPs have a wide range of portfolios. They can offer ready-to-use configured standard software or customized solutions for their clients. With a high level of customization, costs are increasing for MSPs, so it is more challenging to establish an industry footprint in the market. For a starting point, MSPs should begin with standard software, which is not that price intensive and quickly implementable and usable to support business processes in a company (Wattal, 2020, p. 1).

The finance aspect demonstrates a positive effect for companies' short term because the MSP pricing models change the company's costs from fixed to variable, usually based on monthly fees. However, the costs for software licenses are higher in the long term than the company's contribution. The risk needs to be part of the consideration; in fact, the MSP takes the risk for the company, which is one reason why the costs are higher. Positive effects are reflected in long-term contracts with MSPs: conflict goal vs. ITO. The MSP aims to close more long-term contracts with clients since it is more attractive for companies because of the high switching costs to choose a new IT outsourcer or service provider. These costs include software training, data transfer, and software customized for corporate processes (Strecker, 2021, p. 82 f.).

The HR point of view shows that ITO and the MSP model help to avoid staff shortages and grant access to external know-how. Moreover, it is possible to reduce workloads in departments other than IT because the software solution supports processes or takes over routine tasks in the company to relieve employees (Wattal, 2020, pp. 1-4). Table 11 summarizes the opportunities and threats of the MSP model, especially for SMBs.

Table 11: Opportunities and Threats of the MSP Model

Area	Opportunities	Threats
Strategy	Focus on core competencies and use the flexibility of short-term contracts	"Make or buy" decisions for IT-related topics, limited experiences with MSPs, dependency on external company
Performance	Pre-configured solutions, quick access and scalability	Varying service portfolio of MSPs (unreliable network operations, SLAs)

Area	Opportunities	Threats
Financial	Short-term: price advantage	Long-term: reduce cost advantage, possibly high switching costs
HR	Alleviation of personnel shortage / shortage of skilled staff	Staff of MSP does not have the expected skills and competencies for the specific industry

Source: Own depiction according to (Focacci et al., 2013, p. 56 f.)

To summarize this section, the differences and similarities between ITO and the MSP model delimit and show the key aspects of the service provider business. An overview of the opportunities and threats of the MSP model is illustrated in Table 12.

Outsourcing follows a concept introduced by the Scottish economist John Alexander Adam (2023), who observed that the division of labor within manufacturing facilities played a crucial role in enhancing efficiency. Adam consequently deduced that deconstructing intricate tasks into more manageable segments, allowing individual workers to specialize, would ultimately enhance performance and quality. Outsourcing takes his division of labor one step further. Through outsourcing, the employees and entire companies specialize in providing certain services. Particularly in an interconnected world where overhead expenses exhibit substantial disparities across nations, outsourcing, as a manifestation of labor division, can furnish a pivotal competitive edge for client enterprises. Outsourcing yields cost mitigation and amelioration in quality, given that experts in particular domains boast elevated qualifications and extensive proficiency. The researchers were distinct between nearshore, onshore, and offshore ITO. Nearshore outsourcing is to a country close to the customer organization. In a European context, nearshore outsourcing is most associated with Western European client organizations working with service providers from Eastern Europe. North Africa could also be considered a nearshore outsourcing destination for a client organization from Spain (Adam, 2023).

Furthermore, Adam stated no precise criteria for separating nearshore and offshore outsourcing. However, as a general rule, nearshore outsourcing usually refers to countries within a few flight hours of the location of the client

organization. The outsourcer's time zone is also expected to be no more than two to three hours away from the client, so standard working hours largely overlap. In most cases, the geographical proximity leads to better cultural and linguistic compatibility between the employees of both companies. Nearshore outsourcing can also be defined concerning onshore and offshore outsourcing. Onshore outsourcing refers to working with an outsourced service provider in the same country, while offshore outsourcing refers to a location further away from what is typically defined as nearshore. For example, in a European context, India or Sri Lanka would be offshore outsourcing destinations, while Ukraine, Poland, and Bulgaria represent nearshore alternatives.

Beulen et al. (2011, pp. 40-42) stated that outsourcing may be restricted to the company's information system or encompass the entire business process. In the first scenario the recipient establishes performance targets exclusively for the information service, while retaining responsibility for the business processes in which these services are integrated. Broadly speaking, business process outsourcing (BPO) encompasses a broader scope, encompassing performance targets for entire business processes, with information systems being one component. The service provider assumes a significantly greater level of responsibility in such cases. Additionally, companies outsourcing their information systems establish long-term contracts, thereby transferring or sharing the responsibility for delivering essential information services with their chosen provider. With ITO, companies often outsource their entire corporate IT to an external provider. Managed services, on the other hand, usually only cover a selected sub-area of IT, depending on where the company needs support the most. While there is often no longer an in-house IT department with ITO, managed services should relieve the existing IT specialists and support them in their daily infrastructure tasks. In both cases, the enterprises have sovereignty over their IT infrastructure as the responsible IT party or the company. With managed services, they decide which IT services they use and to what extent. Additionally, with ITO, the SLAs clearly define the requirements they place on their infrastructure and the selected IT service provider.

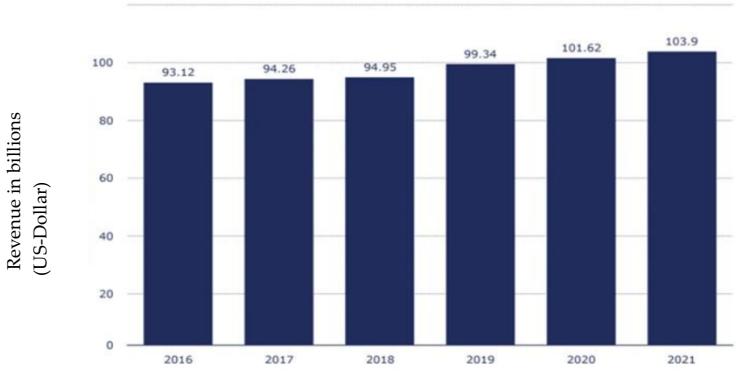
Table 12: Comparison MSP Model to IT Outsourcing

Criteria	MSP	ITO
Target market	SMBs	Corporations, public sector
Contractual commitment	Short-term (1-3 years)	Medium-term (3-5 years)
Marketing approach	One-to-many	One-to-one
Location	Service provider	Client or service provider
Selection of solutions	Limited	Huge range
Type of applications	Standrard or customized solutions	Standard software
Ownership Software license	MSP is license owner	In most cases: Client is license owner
Ownership Infrastructure	Owner of hardware is MSP (incl. system management, operations, and administration)	IT vendor or client can be the owner (incl. operations and partially remote services)
Asset transfer	Not needed	Infrastructure and / or staff
Success factors	Transparent contracts, competitive prices, security, and scalability	Branding, industry knowledge, management of contractual relationship

Source: Own depiction according to (Smith and Kumar, 2004, pp. 984-989)

Numerous companies contemplate outsourcing their information services, and there are numerous reasons to support this decision. First, ITO decreases the total cost of ownership of their service, shortens the time-to-market for new IT services, increases the flexibility of services, provides innovation, facilitates the IT consequences of mergers and disentanglements, and creates a technology shift (Beulen et al., 2011, p. 53). The strategic advantages of nearshore outsourcing and the trend toward remote work open up many new opportunities. Nearshore outsourcing is a mature industry that has evolved since the 1980s (Adam, 2023).

Figure 14: Development of IT Outsourcing



Source: (Statista, 2023)

This maturity has resulted in higher service quality standards, processes, and improvements in the strategic approach of client organizations. Another development in the industry is that nearshore ITO has increasingly been used as a source of innovation. While in the past, IT outsourcers were only used for execution, today, they are increasingly involved in business goals and innovation projects as strategic partners. The company may choose the architecture model IaaS, PaaS, or SaaS for the practical implementation of cloud-based ITO solutions. The final decision is based on the individual goals and tasks of the individual company (BSI, 2012, p. 79).

ITO and cloud computing offer high flexibility when booking, using, and decommissioning resources. The development of the last years is illustrated in Figure 14 to show that there is an increasing business behind. The high savings potential is usually expected on the part of the company or the user. It is important to standardize the services offered and the associated interfaces to further promote the flexibility provided and the possibility of scaling. This solution also allows customers to interact quickly with current and advanced technologies. The other critical advantage of cloud computing is the ubiquitous availability of business applications depending on the cloud model. This aspect promotes increasing mobility among employees and in the implementation of business processes (Lanzrath, 2012, p. 71).

In addition, technical flexibility leads to system and hardware independence, through which the companies can operate areas of their information offerings through ITO (BSI, 2012, p. 79). However, these companies must confront challenges or areas of focus. Since the sensitive data is externally outsourced when using the public cloud, direct control by the organization is withdrawn. Therefore, many legal and contractual regulations and guidelines, such as data protection requirements, must be constantly monitored and complied with. Since, apart from the company, other unknown users also use the same public cloud, there is a risk of violating the basic values of information security (BSI, 2012, p. 80). As with many business decisions, cost savings are the driving factor when outsourcing IT security management. More than half of the companies (52 %) planning to outsource their IT security management expect a noticeable cost reduction. Thus, 38 % want to hand over their entire IT (including IT security) to external specialists (Kaspersky, 2019, p. 6). Interestingly, one-third of companies see outsourcing as an opportunity to tick off the issues of SLAs and accountability. About the same proportion of companies (32 %) admit that due to a lack of appropriate internal resources and expertise, it is the only way to ensure the continuation of business activities with sufficient certainty (Kaspersky, 2019, p. 7).

Conversely, there are good reasons why companies are still reluctant to entrust their IT security to external experts. MSPs should remember this when expanding their business and striving for long-term customer loyalty. Despite expertise being often cited as the top reason for working with a third party, 40 % of organizations opposed to outsourcing IT security management feel they have enough expertise in-house to manage their own IT security. For 33 %, the expected high costs stand in the way of outsourcing IT security management (Kaspersky, 2019, p. 7).

Obviously, cost reductions and optimal use of available IT budgets are the main reasons companies outsource their IT management. Their lack of internal resources and skills in IT security opens up clear opportunities for MSPs to distinguish themselves as cybersecurity experts and to fill the gap in the security management of companies across Europe (Kaspersky, 2019, p. 12). It is, therefore, crucial that MSPs have comprehensive know-how and technological endowments to provide their customers with a high level of service and meet the growing demand for outsourced security services. To attract new customers and increase

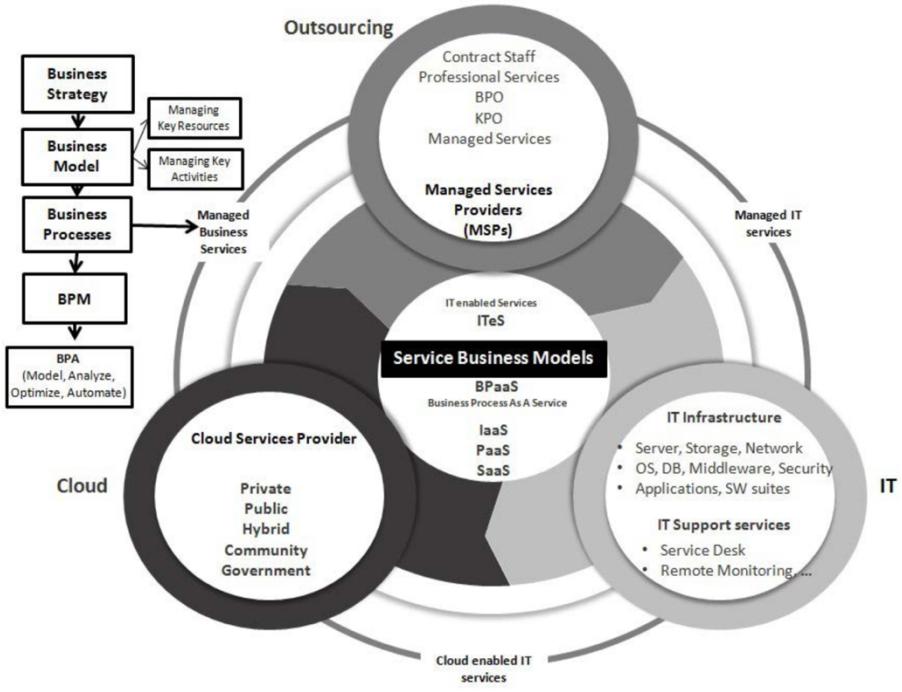
sales, they must expand the repertoire of services offered and focus on market positioning and reputation management to assert themselves against their competitors.

Customers expect comprehensive protection against threats from their MSPs with competence in information security matters. A lack of expertise in this area can lead to losing customers and jeopardizing the trustworthiness of a consultant and partner. Consultative selling is one of the key elements in the strategy to establish close customer relationships between end customers and MSPs (Levy et al., 2022, pp. 1-22). Hence, MSPS must build trust and customer loyalty with a combination of professional tools and the necessary know-how: essential building blocks for supporting customers every step of the way in their businesses. Their reputation is crucial here. A single mistake can have a long-term impact on customer acquisition and retention. It is, therefore, of great advantage for MSPs to cover the entire range of security services supported by a strong and reliable cybersecurity partner. This approach is the only way to realize the forecast market growth, increase profits, and ensure the company's long-term stability. Cybersecurity vendors have an essential role to play in supporting MSPs. It is no secret that MSPs want to expand their security services over the next few years (Kaspersky, 2019, pp. 13-15).

Venkatesh and Singhal (2017) used a hybrid approach integrating the understanding of managed service BMs and their underlying components with BMI. The focus explored the implications for MSPs functioning as business-process-as-a-service (BPaaS) providers and their BMI. Given the rise of cloud-based IT services and "as-a-service" models, they present a synergistic perspective that views different service BMs as a combination of outsourcing for business benefits, IT for digital enablement, and the cloud for optimizing IT benefits. This approach articulates managed services as either managed IT or business services, where digital enablement and IT-centric business processes play a significant role. Figure 15 illustrates the combined view, linking business strategy to business processes and demonstrating how managed business services can be orchestrated and delivered using three key enablers: outsourced business benefits, IT infrastructure, and cloud-based resources. The diagram clearly separates IT resources and cloud deployment options while connecting the outsourced service offerings to the central service BM. This framework aligns with business strategy

and business processes, providing a holistic view of how MSPs can offer their services in a BM setup, the focus of Section 2.3 (Venkatesh and Singhal, 2017, p. 7 f.).

Figure 15: Managed Business Services and Service Business Model Ecosystem



Source: (Venkatesh and Singhal, 2017, p. 8)

2.3 Business Model Innovation

2.3.1 Business Model

As a first step in this section, the definition of BM is critical to achieving a common understanding in this dissertation. However, this dissertation does not claim to be a complete literature discussion.

MSPs originated in the 1990s (Riedl, 2005, p. 2), as mentioned in Section 2.2.3.1. The discussions about BMs exploded as well. During this time, the use of the term was exponentially increasing due to the establishment of the internet (Bellman et al., 1957, p. 469). However, the significance of the development of BMs

has increased. In the past, the literature was related to e-business or e-commerce (Lambert, 2003, p. 6) but is now part of the entrepreneurship research field (Kuckertz, 2015, p. 59). The following Table 13 shows some definitions of the term.

Table 13: Definitions of the term "Business Model"

Authors	Definitions
Kuckertz (2015, p. 59)	"A business model describes the interaction of essential components of a company to generate value."
Osterwalder et al. (2005, p. 3)	"A business model is a conceptual tool containing a set of objects, concepts and their relationships with the objective to express business logic of a specific firm. Therefore we must consider concepts and relationships allow simplified description and representation of what value is provided to customers and how this is done with which financial consequences."
Teece (2010, p. 173)	"A business model articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers. It also outlines the architecture of revenues, costs and profits associated with the business enterprise delivering that value."
Gausemeier et al. (2013, p. 9)	"A business model is an aggregated representation of a company's business logic. It describes how a company creates value that benefits its customers and motivates them to pay the money for it."
Wirtz (2011, p. 70)	"Business models are tools for the holistic and cross-company description, analysis and design of entrepreneurial business activities. In a highly simplified form, they focus on all relevant activities through marketable market services are created and sold."

Source: Own depiction according to (Kuckertz, 2015, p. 59); (Osterwalder et al., 2005, p. 3); (Teece, 2010, p. 173); (Gausemeier et al., 2013, p. 9); (Wirtz, 2011, p. 70)

Several attempts have been made in the scientific literature to derive a generally valid definition from a comparative comparison of the existing

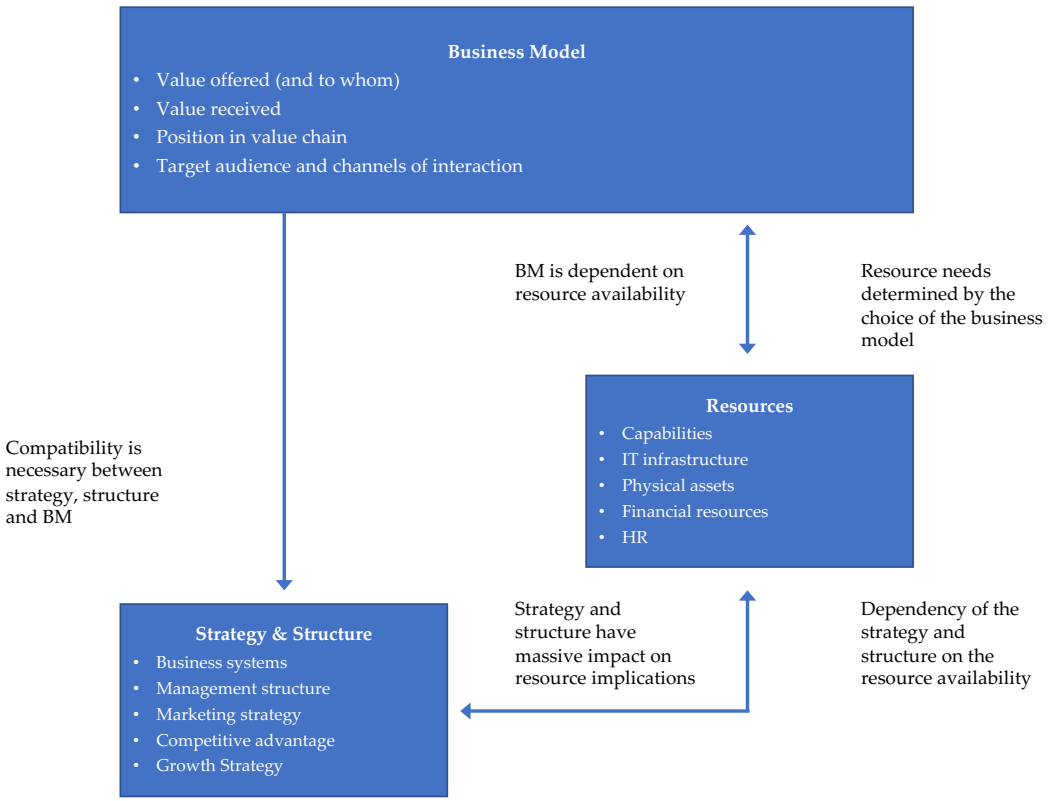
definitions, and the results are different theoretical approaches to the concept of BMs. However, one common ground of the various definitions in Table 13 is that it refers to BMs as methods by which companies execute business. Whether it is called an ”interaction of essential components,” a “conceptional tool,” or “logic,” it states that all companies have a BM and create and deliver value to their clients with the potential aim to earn revenue.

According to Lambert (2003), a BM should describe how companies provide value (Lambert, 2003, p. 7 f.) as follows,

“[…] the collection of attribute values that describe a business concept.”

The different attributes are mapped to the values to create a company's business concept. One part is products, services or information, which represent the value a corporate offers to the clients. Another part is the value a corporate receives, which can be revenue, promotion, or products. The company’s position in the value chain (e.g., as an intermediate or manufacturer) is also essential as an attribute. Finally, it is relevant with whom the company is dealing. The target audience can be consumers (B2C), suppliers, or business partners (B2B), so different interaction channels can be used (Lambert, 2003, p. 8), such as telephone calls, e-mails, chat, video conferences, and face-to-face meetings. The creation or change of a BM influences a company’s strategy and structure. Additionally, the strategy is dependent on the availability of resources. The interaction between the attributes and the three components of the BM, the strategy, and resources is illustrated in Figure 16.

Figure 16: Relationship between BM, Strategy, and Resources



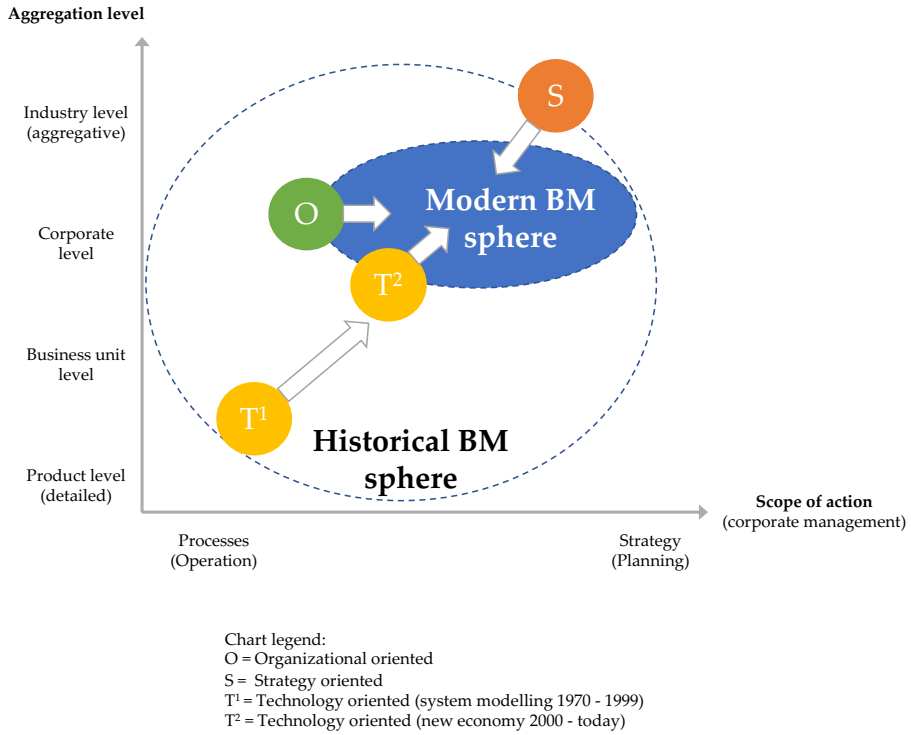
Source: Own depiction according to (Lambert, 2003, p. 9)

One example to explain is an IT vendor that creates physical assets - products (e.g., hardware components) and services - for their clients. They create the assets to meet their clients' requirements with their knowledge and skill. With that value creation, they can target their clients and can be end users / customers (B2C) and / or companies (B2B). Thus, the IT vendor operates in two sectors. The sales department (HR resources) interacts, for example, via e-mail, telephone, and face-to-face meetings to build client relationships. The vendor needs deep IT skills to build the goods and enable the clients to use them. Assuming the vendor produces hardware, it needs at least one facility where the production is based. It also needs to deliver the goods to multiple geographical locations. As a position in the value chain, it is categorized as an IT manufacturer. Finally, the IT vendor earns revenue by selling hardware components.

The heterogeneous understanding of the BM in the literature is not easy to summarize. The main reasons for the deficiency are different contexts of use, diverging objectives, and different degrees of focus areas. However, it can be traced to three basic approaches: IT, organizational theory, and strategy theory (Wirtz, 2011, p. 11). The following discussion is representative of the state of the research. The IT approach originated from the domain of management information systems (MIS). The perception is that BMs are part of the management tool for creating process models. To analyze and document the processes, MISs are used to develop the methods and tools around them. The aim is to increase information-related efficiency and effectiveness with the help of business processes mapped to structured methods. Accordingly, a BM schematically represents how the resources flow into the company and are transformed into market services thru the internal value-add process (Wirtz, 2011, p. 37). BMs are used in the context of management support to represent the corporate organization (Schloegel, 2001, p. 10).

During the 1990s a correlation between BMs and organization theory emerged. Under this organization-focused approach, BMs evolved into a distinct analytical instrument. In this context, they are perceived as abstractions of a company's structure. At the management level, the tool supported the decision-making process and helped to understand the business while screening the competition (Wirtz, 2011, pp. 50-56). The third approach also considered competitive aspects with a company's value-add components and core competencies. In this context, the relation between BMs and corporate strategy was clear. In this way, BMs enabled concepts around entrepreneurial business activities across the company (Wirtz, 2011, p. 56). Accordingly, BMs in this approach were understood as a management concept suitable for describing, analyzing, and designing entrepreneurial activities (Koester, 2014, p. 20). Based on the current research, it is clear that the level of aggregation and corporate strategy has converged. A BM now aims to summarize the high-level story of the corporate and mediate between corporate strategy and business processes. The change of the converging BM is shown in Figure 17 (Wirtz et al., 2016, p. 38 f.).

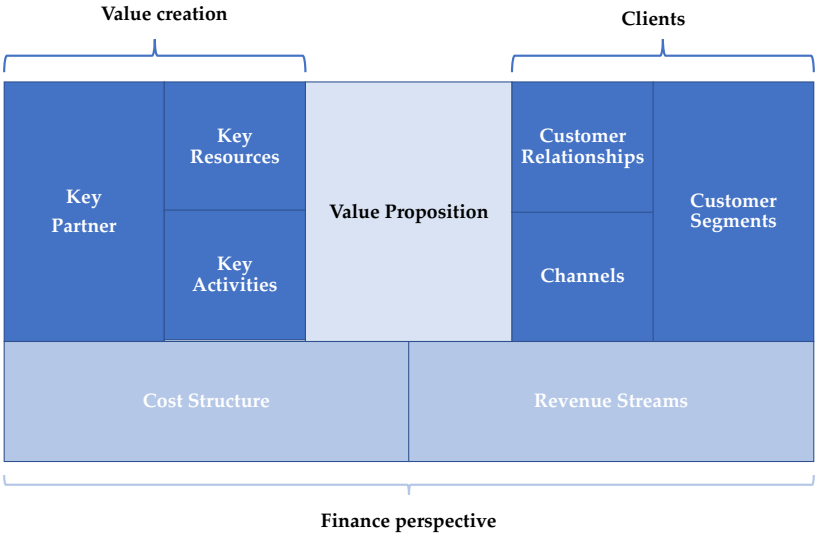
Figure 17: Converging BM view



Source: Own depiction according to (Wirtz et al., 2016, p. 39)

The literature also demonstrates a heterogeny view of BM frameworks and components. One example with a high practical relevance is the BM canvas by Osterwalder (2005), described in Section 2.3.3.1. However, the researcher Johnson used the components of key resources, key processes, customer value proposition, and profit formulas. Different from that perspective was the analysis of Gassmann et al. (2021), who focused on the following questions: Who is the target customer? What is the key offering? How is it produced? How can the value be measured? The selection of the BM depends on the intended objective. Figure 18 shows the nine components of Osterwalder's (2005) BM. This model is based on value creation, clients, and a finance perspective.

Figure 18: BM Canvas Components



Source: Own depiction according to (Kuckertz, 2015, p. 62)

The area of value creation contains key partners, resources, and activities. The first part of key partners is the network of suppliers and other stakeholders involved in realizing the BM. Additionally, resources are needed to ensure profitable fulfillment of the value proposition, which is at the center of the BM. Elements like technologies, employees, and facilities are part of the resources. The key activities are pivotal to delivering the value proposition to the market. Within the element of clients, there are the customer relationships, segments, and distribution channels. Customer segments define the target groups that need to be reached or served by the BM. A specific customer benefit can be assigned to each target group, defined in the BM. Customer relationships are focused on how the corporation connects with potential clients to maintain the relationship. Furthermore, different distribution channels are relevant for the client sector, including how a company reaches out to clients and delivers the value proposition. The financial perspective covers the cost model, describing the main items incurred in the execution of the BM, and the revenue model, where the main revenue streams of the BM are included. The core of the Business Model is the value proposition.

The change of one or more BM components results in a new composition of the BM, which leads to the BMI because the new creation provides benefits in a different way. The development and change of existing BMs are described in Section 2.3.3, focusing on BMI.

2.3.2 Differentiation between Ideas, Inventions, and Innovation

First, the term "innovation" should be clarified, including the description of the origin. The literature does not clearly differentiate between "idea," "invention," and innovation," requiring a definition and delimitation of the use of the terms in this dissertation.

An idea is a structural thought created spontaneously or with the help of creative methods (Vahs and Brem, 2015, p. 21). In most cases, an idea should help solve business issues or challenges, which can relate to a new business idea to achieve competitive advantages. The development of BMs is based on different business ideas (Bach et al., 2003, p. 11). Next is the definition of an invention, which is generally a new creation or a technical realization of new scientific findings (e.g., in the IT industry, it can be a prototype development. In the literature, it is also understood as the first implementation of an idea (Vahs and Brem, 2015, p. 21). However, a relation to economical usage or success cannot be found in the literature, but the term helps to better understand the origin of the term "innovation." Accordingly, no generally valid definition of innovation exists because innovation theory does not exist in the scientific literature. In the early 1940s, Schumpeter (1940, pp. 90-96) described the term "innovation" as an establishment of new production functions or novel combinations of production factors built on technological breakthroughs. When an invention is successfully implemented, realized, and ready on the market, it can be named an innovation following Schumpeter's definition. However, the scope and concept should be broader and include service innovation. Service innovation creates value for clients, employees, and ecosystem partners with the help of offerings, processes, and BMs focused on service (Ostrom et al., 2010, p. 5). In addition, an innovation can be characterized as disruptive or incremental, leading to differentiation. On the one hand, disruptive innovation stands for fundamental changes, which can be quantitative or qualitative. Therefore, it carries more risk (e.g., financial). On the

other hand, incremental innovations deliver minor changes with low risk but low chances for new market potential (Gerpott, 2005, p. 40 f.). The delimitations of the terms are outlined in Figure 19.

Figure 19: Summary of Delimitation terms

Source: Own depiction according to (Vahs and Brem, 2015, p. 21); (Bach et al., 2003, p. 11); (Schumpeter and Innis, 1940, pp. 90-96)

Recently, BMI has developed into a trending topic in science and management, defined in various ways in the scientific literature. It is also part of different research fields, such as innovation management, strategic management, and entrepreneurship (Schneider and Spieth, 2013, pp. 111-125). The starting point is developing something new or disruptive, which creates value propositions, disrupts market conditions, and enters new markets (Peñarroya-Farell and Miralles, 2021, p. 4). However, the focus of future markets is more limited and highly targeted, so this new approach needs to use different processes to be successful over the following years (Chesbrough, 2007, p. 15). Today, BMI stands for the key to success and gaining a competitive advantage (Zott et al., 2011, pp. 1019-1022).

Furthermore, BMs connect with technologies and markets, which can be related to "open innovation." It is described as a precondition for BMs to have open relations between technologies and markets while the actors are not necessarily identical (Yun et al., 2016, p. 326). The BMI is influenced by factors from inside and outside the company, so the concept of open innovation can be applied (Peñarroya-Farell and Miralles, 2021, p. 4). According to Chesbrough and Bogers (2014, p. 12),

"[...] open innovation as a distributed innovation process based on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in the line with the organization's business model."

Table 14: Definitions of the term "Business Model Innovation"

Authors	Definitions
Labbé and Mazet (2005, p. 897 f.)	"A business model innovation changes one or more dimensions of a business model (which are perceived by the authors as product-market combination, the architecture of the value creation and the revenue model) so that a novel configuration of the elements created and implemented." Labbé and Mazet, 2005, p. 897 f.
Chesbrough (2010, p. 355)	BMI "[1] Articulates the value proposition (e.g., the value created for users by an offering based on technology); [2] Identifies a market segment and specify the revenue generation mechanism (e.g., users to whom technology is useful and for what purpose); [3] Defines the structure of the value chain required to create and distribute the offering and complementary assets needed to support position in the chain; [4] Details the revenue mechanism(s) by which the firm will be paid for the offering; [5] Estimates the cost structure and profit potential (given value proposition and value chain structure); [7] Describes the position of the firm within the value network linking suppliers and customers (incl. identifying potential complementors and competitors); and [8] Formulates the competitive strategy by which the innovating firm will gain and hold advantage over rivals."
Geissdoerfer et al. (2016, p. 1220)	"Business model innovation describes either a process of transformation from one business model to another within incumbent companies or after mergers and acquisitions, or the creation of entirely new business models in start-ups."
Lindgardt et al. (2012, p. 292)	"Innovation becomes BMI [business model innovation] when two or more elements of a business model reinvented to deliver value in a new way. […] BMI can provide companies a way to break out intense competition, under which product or process innovations are easily imitated."

Authors	Definitions
Osterwalder and Pigneur (2010, p. 136)	"Business model innovation is not about looking back, because the past indicates little about what is possible in terms of future business models. Business model innovation is not about looking to competitors, since business model innovation is about copying or benchmarking, but about creating new mechanisms to create value and derive revenues. Rather, business model innovation is about challenging orthodoxies to design original models that meet unsatisfied, new or hidden customer needs."

Source: Own depiction according to (Labbé and Mazet, 2005, p. 897 f.); (Chesbrough, 2010, p. 355); (Geissdoerfer et al., 2016, p. 1220); (Lindgardt et al., 2012, p. 292); (Osterwalder and Pigneur, 2010, p. 136)

An analysis of the definitions shown above in Table 14 indicates that the focus is on changing the architecture of an existing BM. However, there are various definitions, including differences in what change means for BMs.

In this dissertation, the definition by Osterwalder and Pigneur (2010, p. 136) is used:

"Business model innovation is not about looking back, because the past indicates little about what is possible in terms of future business models. Business model innovation is not about looking to competitors, since business model innovation is about copying or benchmarking, but about creating new mechanisms to create value and derive revenues. Rather, business model innovation is about challenging orthodoxies to design original models that meet unsatisfied, new or hidden customer needs."

According to the theory of real innovation activity, the innovations can be a positive supply shock that triggers economic growth. Therefore, supporting innovation and patenting activities can be an appropriate policy in times of crisis. The restructuring of the economy in the crisis leads to establishing a new balance at a higher level of productivity. The goal of the crisis is to eliminate ineffective companies and free up sources for effective companies. Similarly, the previously mentioned Shleifer model (Shleifer and Vishny, 1986, pp. 461-488) showed that the stabilization policy is cyclically removed when the expansions are substantial to cover the large fixed costs of innovation. Deviations can be an obstacle to technological development. On the other hand, innovation is demand-driven, as

Schmookler (1966) and others noted. The primary impetus for revival cannot come from innovators who merely react to signs of a revival in economic activity. The notion of open innovation was initially coined by Henry W. Chesbrough and referred to the systematic opening up of companies to the environment as part of their innovation and knowledge management (Bogers et al., 2018, p. 8).

Barthel et al. (2010) delivered the following main areas as starting points for open innovation in companies:

- Stakeholders constantly generate or import new ideas into the company. As a result, the sharing expertise approach was developed, where almost 75 % of the initial ideas for developing new products come from contact with customers (Barthel et al., 2010, p. 103 f.).
- Knowledge is freshly transferred to the company through intensive technology sourcing by acquiring technology licenses from other companies or through cooperation with universities. They contain the latest knowledge impulses and bases. Through strategic alliances with other forms and companies, innovation networks are created with greater input of ideas and knowledge than would be possible purely internally.

Nevertheless, the knowledge sharing inherent in open innovation and the interconnection of expertise should not be misconstrued as unrestricted access to a company's knowledge and technology. The term strictly pertains to collaborative networking. Consequently, open innovation can incur substantial expenses related to licensing and other intellectual property usage. Open innovation basically consists of the combination of two aspects. The first is the sporadic gathering of information on competitive, technological, and strategic factors and the second is a project management method, suitable for transforming ideas from the outside to bring about concrete change from the inside. Firms that target innovation consequently expand external capabilities to encourage diversity of contributions and generate more innovative ideas. This approach falls under the extended enterprise philosophy, as customers, suppliers, universities, laboratories, and start-ups can participate in the internal participatory innovation process (Barthel et al., 2010, pp. 103-105).

Companies have to implement certain strategies to assert themselves in the market. However, no strategy can be considered generally applicable to all companies. The respective marketing plays an important role, where the information can be used as input to develop further strategic planning. At the same time, strategic planning is the basis for a company's successful marketing. Modern companies are embedded in their specific environments, consisting of environmental spheres and stakeholder groups staying in constant mutual interaction (Zueger, 2007, p. 42). The changes in this environment and the environment in general often require an adjustment of business activities. On the other hand, a company can also influence its environment appropriately. The classification of the BM in the company is just as controversial as the definition of the BM. Usually, every company has one or more BMs that are either consciously chosen or can develop independently (Ebert and Deutsch, 2016, p. 17). On the other hand, the corporate strategy is consciously developed as a fundamental and long-term behavior that leads to the realization of the company's goals. According to Ebert and Deutsch (2016, p. 18) the BM can be described as follows,

"[..] an abstract representation of individual or all aspects of the corporate strategy."

which also controls the company's logic of action for implementation. The larger the company is, the more business areas it has, the more strategies it develops, and the more BMs it can implement covering strategic business units (Ebert and Deutsch, 2016, p. 18).

The BM approach includes three sub-models. The focus is on the performance or revenue model, which defines the core concept of the BM on the factual and formal level within the framework of holistic value creation (Busse et al., 2017, p. 221). The performance or revenue model links the BM's factual, formal level, and organizational factual sides. While value creation affects the factual level by describing the benefit provided, it can also be interpreted formally since it also expresses the economic efficiency of the approach (Busse et al., 2017, p. 221). At the organizational level, the BM approach captures the organization's milestones and the service provision's structure. In relation to the market, benefits, important decision-making processes, customer segments, and target groups are also defined. Providing resources is a task on the organizational side and includes all available resources to the company. These are, for example, capacities, know-how, experience, and partnerships that can reinforce objective performance. At the

formal level, the factual aspects must be translated into a cost model (Busse et al., 2017, p. 222 f.). The BM approach must clearly present how customers use the service at the market and demand level while explaining and justifying their interest in the specific service or product. From the formal point of view, the market side of the BM approach explains how this wish to pay can be transformed into a revenue and financial model (Busse et al., 2017, p. 223). All sub-models in this BM approach are connected and should be constantly coordinated and adjusted to each other.

2.3.3 Development of a Business Model

Optimization is a buzzword for every company, and regular improvement is also on every company's agenda, including the BM. Companies try to introduce innovations to the market through entrepreneurial ideas that meet customers' needs (Gerpott, 2005, pp. 37-48). Accordingly, a BM applies to industries, corporates, business units, and product levels. In an aggregated form, it represents relevant value creation and the performance relationship of the market. The value proposition is a core component of the BM.

One part of entrepreneurship is the development of a BM. According to researcher Kuckertz (2015, p. 64), the term is described as follows,

"The basis for developing a business. Model that is potentially revolutionary e.g. changes the entire market structure, is the use of a concept that helps to identify the critical components of value generation and their interaction."

The term "business model" originated with business modeling in business informatics, where business and information processes of companies were recorded and presented. From a business point of view, the aim of this methodology that emerged in the 1970s was to increase the efficiency of operational processes (Lindemann, 2011, p. 267). Amid the emergence of the New Economy in the 1990s, the term was expanded, and a BM was understood as a holistic form of description that combined the essential elements of business and corporate strategy in one construct (Zollenkop, 2006, p. 29 f.). The term has become a buzzword and lacks a general definition (Schallmo et al., 2016, p. 15).

A BM outlines a company's strategy for generating profit. It delineates the products or services the company aims to offer, the intended target market and

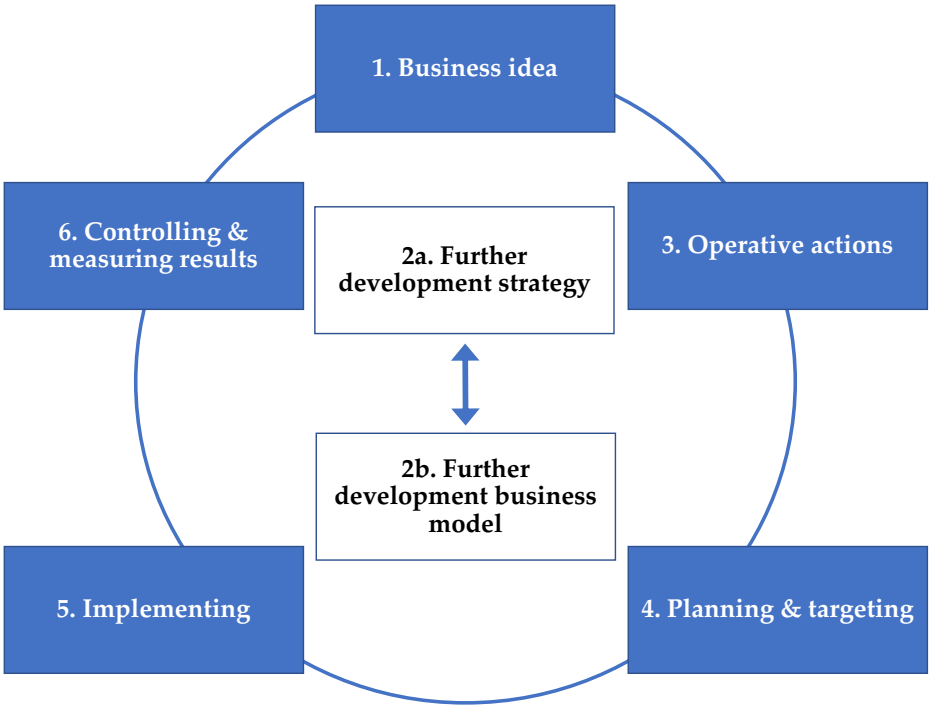
projected expenditures. BMs hold significance for both nascent and well-established enterprises. They aid emerging businesses in securing investments, recruiting skilled personnel and fostering motivation among leaders and employees. Lindemann (2011, p. 268 f.) stated that modern companies already active on the market should constantly check and update their BMs to meet new business conditions, trends, and customer requirements. Combining elements is pivotal for defining BMs (Schallmo et al., 2016, p. 15). In any case, the core of the definition is the common basic business understanding: a BM describes the business activities of an economic entity or a company in a compact form based on a holistic perspective (Zollenkop, 2006, pp. 42-45). BMs are used to analyze the competitive position, coordinate the provision of services, and represent a key determinant of economic performance. Differences in understanding the BM mainly result from the focus on individual sectors or elements of a BM and the degree of their operational orientation (Lindemann, 2011, p. 268 f.). The BM consists of three components: the business area, the configuration of value creation, and the revenue model. The design and interaction of these elements determine the customer's benefit and competitive position (Lindemann, 2011, p. 269).

Schallmo et al. (2016, p. 16) expanded dimensions he defined as elements and divided them as follows:

- Customer dimension: encompassing customer segments, customer channels, and customer relationships,
- Benefit dimension: encompassing services and advantages,
- Value creation dimension: involving resources, skills, and processes,
- Partner dimension: concentrating on partners, sales channels, and relationships,
- Financial dimension: captures sales and costs.

The goal is to combine these elements to reinforce each other to achieve growth while making it more difficult for competitors to imitate (Schallmo et al., 2016, p. 17 f.). Today, experts assume that a BM represents a more concrete image of corporate strategy. In this respect, the BM can be formulated before, during, and after the strategy (Ahrend, 2016, p. 10):

Figure 20: Structure of a Business Model



Source: Own depiction according to (Ahrend, 2016, p. 11)

The BM describes how customer benefits are created and how relationships with customers and partners look. The BM aims to contribute to the economic value of an enterprise (Ahrend, 2016, p. 11), as structured as in Figure 20. The requirements of customer integration, consideration of future developments, and consideration of technologies are integrated into the BM vision, which includes the following objectives according to Schallmo et al. (2016, pp. 58-60):

- The orientation of the BM vision onto potential customers' and customers' needs that exist within the respective industry. The focus is on the holistic view of customers'.
- The integration of new technologies into the BM (e.g., the BM vision ensures that new technologies are integrated).
- The alignment with the future: General trends are integrated into the BM ensuring that the BM is future-oriented.

- The further development and protection of the BM against competitors.
- The ecological and social aspects that are increasingly important and included in modern BMs (Schaltegger et al., 2016, pp. 3-6), including the reduction of environmental damage and risks as well as ecological scarcity on the one hand and the increase in welfare and the reduction of social disadvantages on the other (Fichter and Clausen, 2013, p. 25 f.).

According to Dentchev et al. (2016, p. 1), sustainable BMs focus on solving ecological and social problems. The question "How do we earn money in this business?" is the priority for many managers, per Magretta (2002, p. 87), in the background of sustainable BM. In recent years, many academics have tried to formulate definitions of BMs after precise analyses with the help of various approaches (Dentchev et al., 2016, p. 1). Schaltegger et al. (2016, p. 6) determined three important aspects for describing, analyzing, controlling, and communicating the milestones of a BM:

- The sustainable value proposition a company offers to its customers, and other stakeholders.
- The methods through which a company generates and delivers the value.
- The means by which the company acquires economic value while safeguarding or replenishing natural, social, and economic capital across its organizational scope.

Analyzing the diversity of sustainable BMs is a current topic that helps determine the boundaries in this area while synthesizing current knowledge. Limitations exist in terms of organizational forms, management mechanisms, potential sustainability solutions, and challenges related to the practical application of the BM. Schaltegger et al. (2016, p. 4-7) argued that the type of organization, niche market players, and established mass markets represent a complex comprising various BMs, with different challenges in their development and establishment. In this context, numerous research studies have discussed features and archetypes and further details of the managerial and political implications of sustainable BMs (Dentchev et al., 2016, pp. 1-4).

Fichter and Clausen (2013, p. 8) distinguished four types of BMs based on the components of sustainable BMs:

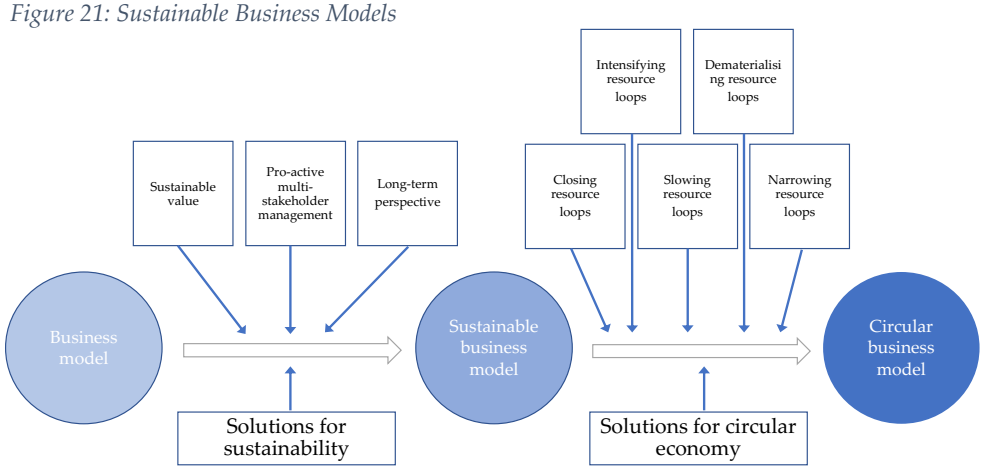
- Those designed neither to develop a positive social impact nor to avoid negative influences,
- Those unintended to have a positive impact but have as little negative impact on society as possible,
- Those focused on a positive effect but are neutralized by negative side effects, and
- Those with a positive impact designed to have as little negative impact as possible.

Amit and Zott (2012, p. 42) presented their BMas a system of interdependent activities to recognize how a company affects customers and sellers and uses its business power. In the BMs proposed by Casadesus-Masanell and Zhu (2013, p. 464), novel approaches and fresh paradigms are formulated for the organization. This innovative strategy seeks to create income and value for customers, suppliers and the ecosystem. Markides (2006, p. 20) showed that innovation in BMs can attract new buyers from existing companies and increase consumption among buyers. According to Teece (2010, p. 172), the main objective of a BM is how the company presents itself to the customer, getting the customer to buy and pay for items while converting them into a profit. Porter and Kramer (2011) highlighted that it is impossible to determine how new sustainable BMs can establish themselves in the real world without being exposed to maximum profits (Porter and Kramer, 2011). The focus for sustainable companies can also be organized differently than traditional for-profit companies, while value creation and recognition remain important. In addition, sustainable BMs can also be created by non-profit organizations and citizens (Dentchev et al., 2016, p. 2). Furthermore, the question arises whether organizational and legal structures play a role in the variety of framework conditions.

Factors related to sustainability, such as the rise in inequality and environmental deterioration, underscore the need for a shift toward a more sustainable economic framework. Hence, the private sector is the key player, with the biggest share of resources and capabilities. However, technological progress toward sustainability is increasingly incremental, so many companies struggle to meet their sustainability goals. Therefore, innovation is required at the BM level to align incentives and drivers to achieve sustainable solutions. Different definitions of the variety of sustainable BMs (illustrated in Figure 21) share seeing sustainable

BMs as a modification of the traditional model concept, which is supplemented by certain characteristics and goals and they contain either 1) concepts, principles, or goals aimed at sustainability or 2) sustainability in the value proposition, value creation and supply activities, and / or value creation mechanisms (Geissdoerfer et al., 2018, p. 404):

Figure 21: Sustainable Business Models



Source: Own depiction according to (Geissdoerfer et al., 2018, p. 406)

The literature describes different types or generic strategies for sustainable BMs, such as product-service systems, the basis of the pyramid, and circular BMs (Geissdoerfer et al., 2018, p. 404), which have additional characteristics. For example, the characteristic of circular BMs is sustainable value creation with proactive multi-stakeholder management and a long-term perspective, closing, slowing down, intensifying, dematerializing, and narrowing resource cycles (Geissdoerfer et al., 2018, p. 405). Some scientists believe that innovation BMs or BMI achieve higher revenues than product or process innovations (Geissdoerfer et al., 2018, p. 402). BMI formulates the value proposition, exemplified by the value generated for users through a technology-driven offering. Such a BM variant identifies a particular market segment and outlines the approach for generating income. A user, for whom technology is essential, defines the structure of the value chain required to create and distribute the supply and the complementary assets to support the position in the chain (Geissdoerfer et al., 2018, p. 406).

2.3.3.1 Business Model Canvas

A sustainable BM canvas helps define and develop existing BMs, including economic, ecological, and social perspectives for generating values. With the help of the sustainable BM canvas, a dialogue can be conducted about the respective BM and its effects on the environment and society (Kaitharath, 2022, p. 186). Osterwalder and Pigneur (2010, p. 9) stated that a BM can best be described with nine basic building blocks (shown in Figure 18) that show how a company makes money and wants to achieve impact. The new building blocks cover a company's four most important areas: customers, offerings, infrastructure, and financial viability (Becher and Hastedt, 2019, p. 153). The utilization of the canvas extends beyond solely profit-driven companies, it is also relevant for non-profit organizations and social enterprises.

Osterwalder and Pigneur (2010, p. 204) add two more elements to the BM canvas:

- The social and environmental costs of a BM (e.g., its negative impacts);
- The social and environmental benefits of a BM (e.g., its positive impact).

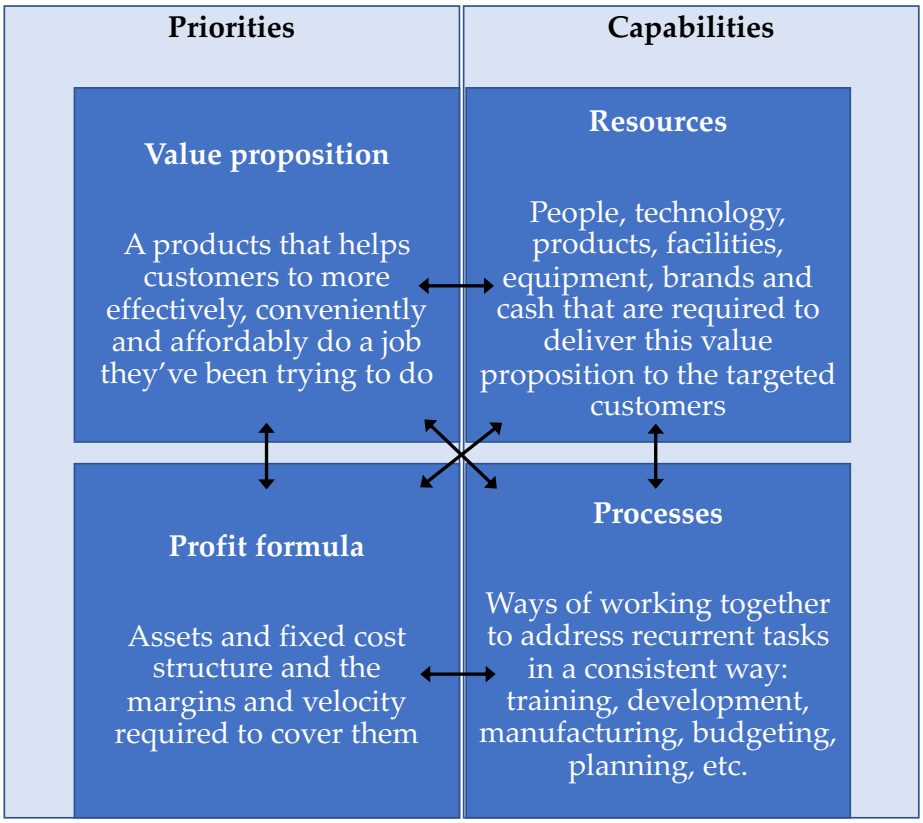
As profitability is enhanced through the reduction of financial expenses, and the augmentation of revenue, this addition involves contrasting the adverse social and environmental repercussions of the BM against its favorable social and environmental attributes. Furthermore, the concept of customer must be differentiated into users and cost bearers or paying customers, since both are usually not identical in the social relationship of the social economy (Becher and Hastedt, 2019, p. 153). According to Osterwalder and Pigneur (2010, pp. 24-26), the BM canvas must be adjusted to the needs of customers in social enterprises. In the leveraged BM, the recipient of the product or service is not the payer. The payer is a third party who can be a donor (Qastharin., 2015, p. 3). The external party remunerates the organization to undertake a mission, which could encompass social, environmental, or public objectives. Examples are philanthropy, charities, and governmental issues (Osterwalder and Pigneur, 2010, p. 109). Similar to a multi-stage platform for profit BMs, the canvas does not require any significant changes. Nonetheless, within triple-bottom line BMs, two fresh components are incorporated into the canvas at the lower section: The social and environmental expenditures as well as the social and environmental gains. The triple-bottom line model aims to minimize negative social and environmental impacts and maximize

positive ones (Qastharin, 2015, p. 4). Burkett (2016, p. 8 f.) saws the key of role the BM canvas in social enterprises as separating commercial model, integrated into a common BM story. The ability to visually and meaningfully communicate how the commercial and the social are connected, the business model represents a crucial ingredient in designing an effective and sustainable enterprise. If a social enterprise manager expects to be able to finance a major and complex social problem with a flimsy and unrealistic BM, it becomes obvious once the elements and the relationships are mapped schematically onto a BM. On the other hand, if the BM is robust, but it's the impact weak or meaningless, the canvas helps all stakeholders to develop a common understanding and to engage in an open dialogue to strengthen and amplify impact through BMI (Burkett, 2016, p. 9).

2.3.3.2 Four Box Business Model

Clay Christiansen proposed the four-box innovation model, which has the function of showing the main focus of the business. He set four key areas between priorities emphasizing value proposition and profit formula and capabilities underscoring resources and processes, as illustrated in Figure 22. These areas depend on each other and overlap, depending on which aspects are important at each stage of the business life cycle. It breaks down the innovation BM timeline into three stages: creation, sustaining innovation, and efficiency, equivalent to launch, growth, and maturity (Simplifying Marketing, 2022).

Figure 22: Four Box Business Model



Source: Own depiction according to (Simplifying Marketing, 2022)

The value proposition is the center of the BM development. If the offer does not meet an important customer need better than other solutions, customers are not motivated to come. At this stage, the priority is to identify and understand the customers' needs and adjust the offer according to them. The proposition is much more than just a product. Some of the most successful innovations of recent years have focused on finding different ways to sell or own a product rather than fundamentally changing it. The most obvious examples are Netflix, Uber, and Spotify (Simplifying Marketing, 2022).

In addition to developing the value proposition, the required resources are determined for the value proposition to drive innovation. At this stage, the main focus is on awareness, growth, and market share rather than revenues. The company still needs to be flexible, scale business, and gain as many customers as

possible (Simplifying Marketing, 2022). Certain patterns and obvious repetitive tasks emerge as business analyses and collect market experience. At this stage, the business seeks to formalize and possibly automate processes, moving from start to maturity, corresponding to reduced resources or a need to standardize activities. At this stage, the organization develops its hierarchies and becomes more specialized. Fragmentation and differentiation begin to emerge (Simplifying Marketing, 2022). As businesses mature, the company moves from high growth to a more stable environment where the return on investment (ROI) is likely to depend more on efficiency than growth. At this stage, the costs of structure and profitability are more relevant, while solutions are less customer-centric than at the beginning. Financial ratios, a formal BM, and investor relations are integral to the business (Simplifying Marketing, 2022).

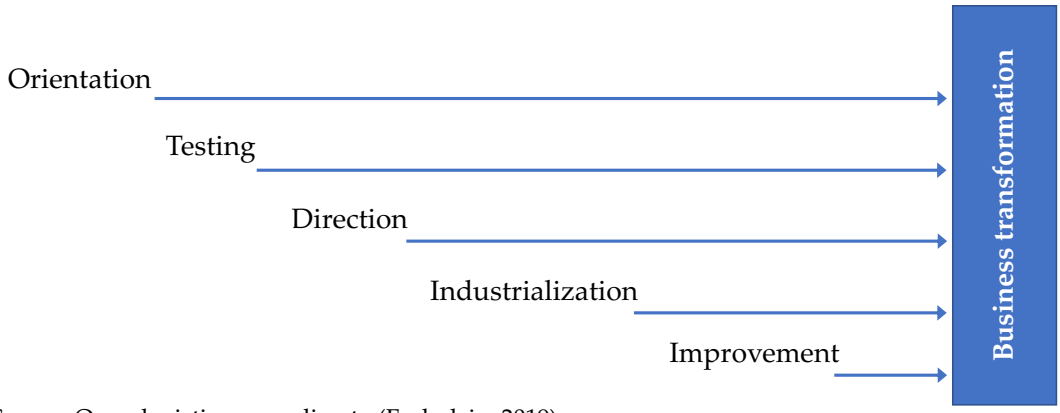
2.3.3.3 Digital Enterprise Integrated Management Framework

Historically, digitalization can be traced back to converting analog media such as photographs, sound recordings, and films. The result is files of bits and bytes. Furthermore, digitalization can be viewed as a transformation process made dynamic by technological development. This transformation process can relate to companies or entire industries and entails strategic, organizational, and socio-cultural changes (Petry, 2019, p. 23). Instead, it is about a change in attitude. Companies must learn and live this change (Ternès and Englert, 2019, p. 10). Changes result from the increasing networking of people and things and virtualized processes and products. The exchange of knowledge is becoming increasingly critical. Digitalization has significantly impacted the growth and innovative power of a company. Digital transformation has been the center of interest for researchers and practitioners in recent years. The transformation affects every aspect of the company's business and business process models (Majdalawieh and Khan, 2022).

Recent research has proposed different methods and ways to prepare an integrated digital transformation system framework. To overcome challenges, researchers developed the conceptual model. A system theory was used for the model to develop it from a multi-level perspective (Scharnhorst et al., 2012, pp. 12-17). The five-stage model (illustrated in Figure 23) does not describe a rigid procedure but can be used flexibly and adapted to the questions, requirements, and

development level of the respective customer or company area. The digital transformation framework is divided into the following stages:

Figure 23: Scheme of Digital Enterprise Integrated Management Framework



Source: Own depiction according to (Enderlein, 2019)

The initial aim is to provide customers with know-how on topics and trends in digitalization and create an understanding of what is relevant for the company in the context of, for example, big data, the IoT, or machine learning to create added value. Formats for conveying this are very different and can be used flexibly, from presentations and classic training courses to workshops and demos (in digital innovation labs). At this and the following phase, initiators are often individual protagonists of a company or department, the key players with customers who are convinced that digitalization will bring profit in the medium term (Thite and Bhatta, 2018, p. 43). In the testing phase, customers decide to continue pursuing the topic of digitalization. It is a matter of identifying, specifying, and prioritizing use cases. It is important to balance between experimenting and practical orientation. In an agile process, where the work is established as quickly and cost-effectively as possible, a prototype is filtered out of many conceivable use cases, which is also suitable as a lighthouse project for digitalization. Thus, the internal company can bang the drum to create a broader consensus for upcoming changes (Bargh and Troxler, 2020, p. 341). Companies often decide to enter into digitalization with the foundation of a lighthouse project. First, they find direction, what is relevant, and what is needed, which means a broader understanding of digitalization must be created. Strategic questions arise in the context of digital transformation: the

adjustment of organizational structures, processes in the company, technologies and tools, and the necessary skills. This phase primarily offers customers strategic advice (Bargh and Troxler, 2020, p. 360). Industrialization is mainly about two points. First, an organizational, procedural, and technical basis must be developed for the appropriate use cases. Second, it is about industrializing the testing process (e.g., expanding the agile approach to the entire company and creating the necessary structures). In addition to implementing the digital solution, the focus is on searching for further use cases, scalable solutions, and appropriate platforms while establishing teams that control and drive the digital transformation in the company (Enderlein, 2019). Hence, corporate culture questions are important considering the training and methods performed, including ideation techniques such as design thinking, modern implementation approaches, and agile management methods (Enderlein, 2019). Continuous improvement processes are in the foreground in the phase where the company converts the new technologies into a stable, quality-assured operation. As a result, users often seek more practical knowledge or exchanges with external specialists. Coaching, ITO, and exchange platforms and services are relevant at this framework level (Enderlein, 2019).

2.3.4 Impact of Digitalization on Business Models

So far, the importance of BMs and digitalization has been highlighted. Innovation and new technologies disrupt how firms conduct business (Fakhar Manesh et al., 2021, p. 289). As a consequence of the former literature research, the two topics of digitalization and BMs are combined in this section.

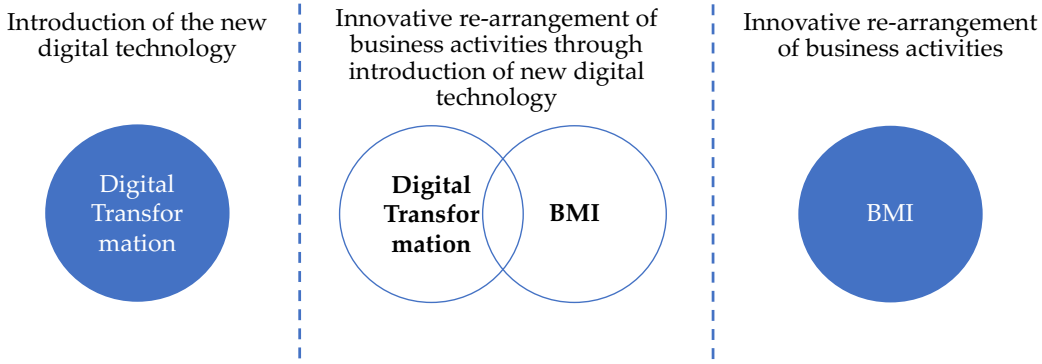
Digital technologies offer change in many industries and identify new ways of doing business and creating value for clients (Vaska et al., 2021, p. 1). Additionally, it describes the relationship between digitalization and BMs (Vaska et al., 2021, p. 2):

"Digitalization is therefore seen as an entrepreneurial process where firms in pursuit of digital transformation render formerly successful BMs obsolete by implementing business model innovation, which is revolutionizing many industries."

Creating a new BM or adjusting the current BM can be massively influenced by the innovation process of value creation. Additionally, corporations continue building a competitive advantage (Zott et al., 2011, p. 1020). The priority of digital

transformation is to adopt and implement new technologies into a BM; it is irrelevant if it is on a strategic or operational layer of a company. The interplay between the terms is illustrated in Figure 24. The re-arrangement of business activities can shape a new BM, and with new technology, the value creation is often even higher (Fitzgerald et al., 2013, p. 4).

Figure 24: Interplay Digital Transformation and BMI



Source: Own depiction according to (Fitzgerald et al., 2013, p. 4 f.)

A research gap persists concerning the interplay between the different components technology (digitalization) and BM. Technologies are often used in a process-oriented manner in the company. As a result, they can help to influence corporate transformation. For companies to continue to be successful in the market and to meet current customer requirements, they use new digital technologies. Digital transformation brings with it new technologies, which focus particularly on innovation. This innovation is then also reflected in the company's BM (Guo et al., 2020, pp. 352-355). In connection with new technologies, companies mainly focus on the automation of processes, data analyses that help to make decisions in the company or even build new platforms. With these possibilities, companies are able to adapt their products and services to the needs of their customers and expand their business (Akter et al., 2022, pp. 9-11). Digitalization is influencing the way companies create value. An overview is illustrated in Table 15. However, the degree of change in the various elements in the BM canvas varies. For example, the elements channel and customer relationships can be influenced directly or indirectly by digitalization. The individual elements of the BM are discussed below (Jahn and Pfeiffer, 2014, pp. 82-85).

Table 15: Impact of Digitalization on BM elements

BM Element	Impact of Digitalization
Value Proposition	- Differentiation of products - Move from seller-oriented market to buyer-oriented market
Channels	- Omnichannel strategy - Focus client communication (location independent)
Customer Segments	- With data analysis a more granular client segementation is possible
Customer Relationships	- Build on changed consument behaviors with user profiles and consumption patterns - Customer loyalty can be achieved with innovative products and indiviual services
Revenue Streams	- New revenue streams can be build with online sales channels
Cost Structure	- Cost structure can change (depending on resources)
Key Activities	- Optimizing value chain - Supporting digital channels for end customers
Key Partner	- Building ecosystems to enable synergies between different parties - Allows collaboration across the globe - Source for new BMs or collaboration opportunities: Innovation Hubs
Key Resources	- Employees are the most critical success factor - Focus on organizational culture and IT - Building new digital thematic areas - Open IT architectures (to operate agile and flexible)

Source: Own depiction according to (Akter et al., 2022; Guo et al., 2020; Jahn and Pfeiffer, 2014; Johnson et al., 2008)

The impact of digitalization on the BMs of companies relates in particular to the integrated innovation capability in process optimization and the use of digital technologies for the realization of omnichannel architectures and for supporting product development. Furthermore, digitalization is described as a transformation process and the use of digital technologies is classified in the BM elements in key resources and channels. The integrated innovation capability has two parts. The first part relates to the innovation capability of customer engagement. Here, the

components of customer relationship, channels used, customer segments and the specific products or value propositions offered are considered. This area also includes the development and management of the partner network which is represented by the component key partnerships. The second part covers the integrated innovation capability in the optimization of internal processes. Within the key activity component, the optimization of processes in relation to supporting innovation capability and industrialization is highlighted as a core topic. Whereas innovation capability is also strongly discussed in the key resource component especially in relation to organization and technology. The following conclusion can be made: Digitalization is a new development step after the industrialization of IT and a company's innovation capability is the critical success factor to win new clients and be ahead of the competition (Lembke and Honal, 2015, pp. 62-69).

2.4 Research Frameworks

2.4.1 Dynamic Capabilities Framework

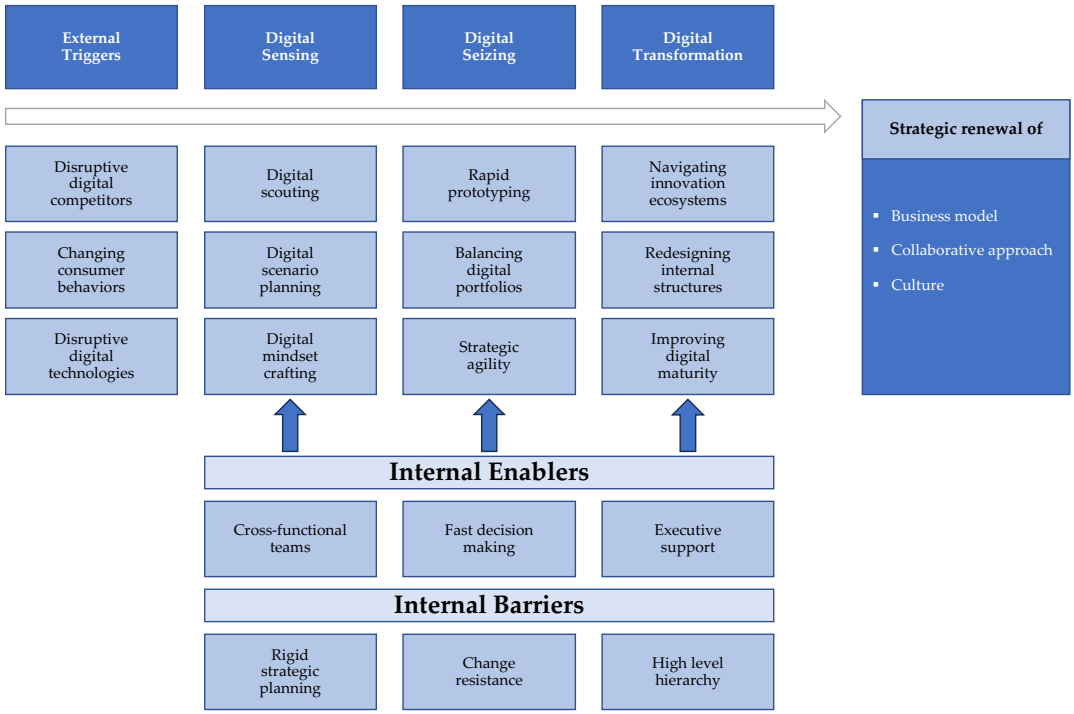
This dissertation examines the evolution and significance of the dynamic capabilities framework, tracing its origins to Penrose's Resource-based view and its subsequent connection to the knowledge-based perspective (Penrose, 1959 / 2009, Wernerfelt, 1984). It emphasizes the central role of idiosyncratic knowledge resources in the era of informational advancements, particularly in driving BMI. Coined by Teece et al. in 1997, dynamic capabilities are explored as a set of mainly immaterial competencies enabling businesses to adapt flexibly to rapidly evolving market environments. Dynamic capabilities are difficult to develop and transfer and in combination with complimentary assets, e.g., capital and subject knowledge, they enable companies to advance in highly innovative environments (Devi et al., 2022, pp. 500-504). The challenges are in developing and transferring dynamic capabilities and their synergy with complementary assets like capital and subject knowledge, contributing to firms' advancement in highly innovative settings. Moreover, it investigates how dynamic capabilities, through mental competencies, enhance firms' adaptiveness, mental flexibility of leaders and quick adoption of emerging technological fields for successful BMI. The research underscores the importance of continuous creative innovations that cater to changing customer

requirements, especially in managed service industries where co-creation and co-value destruction are hallmarks of radical innovation (Pathak et al., 2020, pp. 9-12).

The dynamic capabilities framework as proposed by Teece et al. (1997) and expanded upon by Warner and Wäger (2019), is undergoing fundamental transformations due to three key external triggers, which are illustrated in Figure 25. These triggers encompass disruptive digital rivals, alterations in consumer behaviors and the rise of transformative digital technologies. Each of these factors is significantly impacting the nature and application of dynamic capabilities in the current business landscape. Hence, in response to this challenge, Warner and Wäger (2019) have formulated a process model grounded in empirical observations. This model outlines nine digitally based micro-foundations or "sub-capabilities", which facilitate the development of digital sensing, - seizing and - transforming capabilities. Drawing inspiration from this process model, the present study seeks to explore the impact of digital dynamic capabilities on the digital transformation processes of SMBs operating in diverse industries. The objective is to gain a comprehensive understanding of how these digital dynamic capabilities influence and shape the digital transformation journey of SMBs in the contemporary business landscape (Warner and Wäger, 2019, pp. 327-336).

Dynamic capabilities relate to an organization's ability for adjusting, restructuring and leverage its resources in reaction to evolving circumstances. In the case of MSPs, the dynamic capabilities framework can be instrumental in identifying and developing new BMs that align with the challenges and opportunities brought about by digitalization. By recognizing the need for continuous adaptation and flexibility, MSPs can integrate digital technologies and competencies into their existing BMs, enabling them to offer innovative and value-added services to their customers. Furthermore, the dynamic capabilities framework emphasizes the significance of perceiving, seizing and reconfiguring resources and capabilities to maintain competitiveness in the digital age. As MSPs navigate the complexities of digitalization, the application of the dynamic capabilities framework can foster a culture of continuous learning and agility, facilitating the creation of BMs that are resilient, adaptive and customer centric.

Figure 25: Digital Dynamic Capabilities Framework



Source: Own depiction according to (Warner and Wäger, 2019, p. 336)

2.4.2 *Entrepreneurial Framework Conditions*

The interrelationship between entrepreneurial capabilities and dynamic capabilities in the context of innovation and entrepreneurship is essential. Entrepreneurial capabilities, which form the micro-foundations for dynamic capabilities, are crucial for SMBs in adapting to disruptive technologies, market changes and industry needs (Teece, 2007, p. 1320). Recognizing the importance of innovation in addressing these challenges, this highlights how dynamic capabilities enable businesses to develop and leverage assets for sustained business performance through rapid innovation. Entrepreneurial capabilities encompass patterns of collaborative activities employed by SMBs to recognize novel opportunities and establish the essential resource foundation for pursuing these prospects. Arthurs and Busenitz (2006, p. 199) define entrepreneurial capabilities as the ability to initiate new businesses or seize new opportunities, a concept commonly associated with individual entrepreneurs, but equally applicable to

entrepreneurial teams or organizations acting as corporate entrepreneurs. Díaz-Casero et al. (2011, p. 851) highlight that entrepreneurial capabilities are instrumental in evaluating and creating new business ventures, often require specific entrepreneurial framework conditions for success. Innovation serves as a pivotal response to disruptive technologies, market shifts and industry demands in the entrepreneurial landscape. According to Schumpeter and Innis (1940, p. 90) there is a strong relationship between innovation and entrepreneurship, emphasizing that dynamic capabilities play a crucial role in enabling new businesses to foster long-term performance through continuous innovation. Dynamic capabilities encompass a range of skills, processes, organizational structures, and discipline that facilitate sensing, seizing and reconfiguration, as outlined by Reynolds et al. (2005, pp. 205-208). Businesses equipped with strong dynamic capabilities exhibit a more entrepreneurial nature, shaping themselves through innovation and fostering collaborations with other companies. The importance of entrepreneurial capabilities as micro-foundations for dynamic capabilities in the domain of entrepreneurship is crucial. As businesses have difficulties with evolving market dynamics, embracing innovation becomes mandatory. Leveraging dynamic capabilities empowers SMBs to adapt swiftly to change, develop valuable assets and engage in collaborative endeavors, all of which contribute to their entrepreneurial success and sustained growth through continuous innovation according to Teece (2007, p. 1329).

Entrepreneurial framework conditions (EFC) refer to the specific set of contextual factors and enabling conditions that shape and influence the entrepreneurial ecosystem within which businesses operate. These conditions play a critical role in determining the success and growth of entrepreneurial ventures (Shah and Lala, 2021, p. 507). EFC encompass a diverse range of elements, including regulatory policies, market structures, access to financial resources, availability of skilled labor, support from government and institutions, technological infrastructure, and cultural attitudes toward entrepreneurship. The presence of favorable EFC facilitates entrepreneurial activities, encourages innovation, and reduces barriers to entry for new ventures (Costa e Silva et al., 2021, p. 2). Conversely, unfavorable EFC can hinder entrepreneurial initiatives, stifle creativity, and impede the development of new businesses. Understanding and

optimizing entrepreneurial framework conditions are paramount for policymakers, entrepreneurs and stakeholders seeking to foster a vibrant entrepreneurial landscape and drive economic growth and development (Wennekers et al., 2005, pp. 294-296).

Over the years, the Global Entrepreneurship Monitor (2022) (GEM) conceptual framework has undergone gradual evolution, resulting in increased clarity regarding the interplay between social values, personal attributes, and diverse forms of entrepreneurial activity according to Reynolds et al. (2005, pp. 205-208). However, the foundational assumption of this framework remains unchanged: Entrepreneurial activity does not solely stem from the heroic efforts of individuals, irrespective of the contextual environment in which it occurs. Instead, entrepreneurial activity emerges from the dynamic interaction between an individual's perception of an opportunity, their capacity (motivation and skills) to act upon it and the unique conditions prevalent in the surrounding environment (Wennekers et al., 2005, p. 297). The impact of a nation's entrepreneurial conditions on entrepreneurial activity is evident through its direct influence on the population's assessment of entrepreneurial opportunities and potential. Specific factors, such as the availability of financial resources, access to grants and subsidies for SMBs and the incorporation of SMB-related training within the education system, shape the overall entrepreneurial landscape (Troilo, 2010, pp. 131-138). Additionally, the extent to which research and development opportunities are available to SMBs, the presence of supportive commercial and legal infrastructure and entry regulations' market dynamics and openness also influence the entrepreneurial climate (Aleksandrova et al., 2020, pp. 1-5).

Moreover, the overall and entrepreneurial contextual conditions within a nation are molded through a blend of social, political, economic, and as well cultural elements. The national framework conditions reflect different stages of economic development, ranging from factor-driven to efficiency-driven and innovation-driven phases (Aleksandrova et al., 2020, pp. 1-5). Furthermore, the existence and caliber of government entrepreneurship initiatives at various tiers (national, regional, and municipal) play a role in shaping the holistic entrepreneurial ecosystem (Wennekers et al., 2005, p. 296 f.).

In this context, various factors play crucial roles in shaping entrepreneurial framework conditions. These include entrepreneurial education and training,

accessibility to physical infrastructure and services, cultural and social norms that either encourage or discourage entrepreneurial actions and the availability of policy interventions and social benefits for senior entrepreneurship (Wennekers et al., 2005, p. 298). Understanding the multifaceted interactions between these factors is pivotal for policymakers, entrepreneurs and stakeholders seeking to foster a conducive environment for entrepreneurial growth and prosperity (Szabó and Aranyossy, 2022, pp. 32-37).

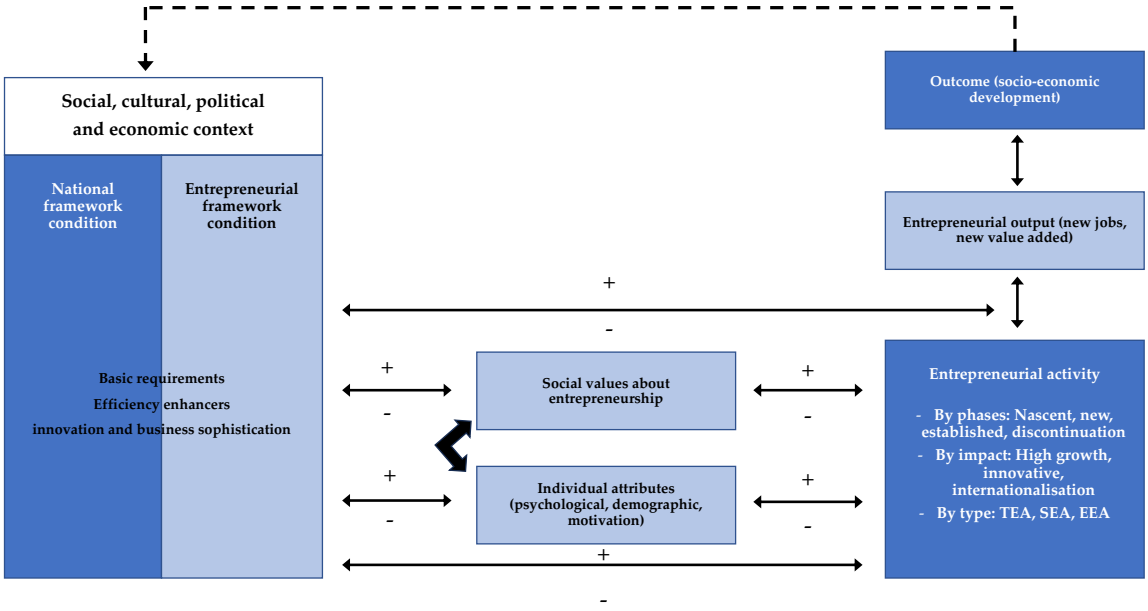
Overall, GEM's distinctive research tools and data provide valuable insights and benefits to various stakeholder groups, which include the following according to Reynolds et al. (2005, pp. 208-227):

- Policymakers, who can make informed choices to nurture thriving entrepreneurial ecosystems.
- Entrepreneurs, who can enhance their understanding to identify investment prospects and strategically exert influence.
- Academics, who can employ distinctive methodologies to analyze entrepreneurship on both national and regional scales.
- Sponsors, who can collaborate with GEM to further their organizational objectives.
- Global entities, which can tap into GEM's entrepreneurial insights through publications and conferences.

GEM's extensive publications provide in-depth insights into entrepreneurial subjects and regions, facilitated by a diverse range of indicators forming its theoretical foundation (shown in Figure 26). These publications explore diverse facets, covering a nation's entrepreneurial contextual conditions, individual traits of entrepreneurs and prevalent attitudes and societal values linked to entrepreneurship (Reynolds et al., 2005, p. 210 f.). The data gathered through GEM cover an extensive range of entrepreneurial activity indicators, including the stage or phase of new ventures (nascent, in consolidation, motivation - necessity versus opportunity), industry, dimension, growth, innovativeness, competitiveness, internationalization, job creation, social role, intrapreneurship, discontinuation and informal financing, among others (Reynolds et al., 2005, pp. 208-227). These indicators offer a comprehensive and multifaceted view of the entrepreneurial landscape, enabling stakeholders to gain deep insights into the dynamics and

implications of entrepreneurship in different contexts (Wennekers et al., 2005, p. 296 f.).

Figure 26: GEM Conceptual Framework

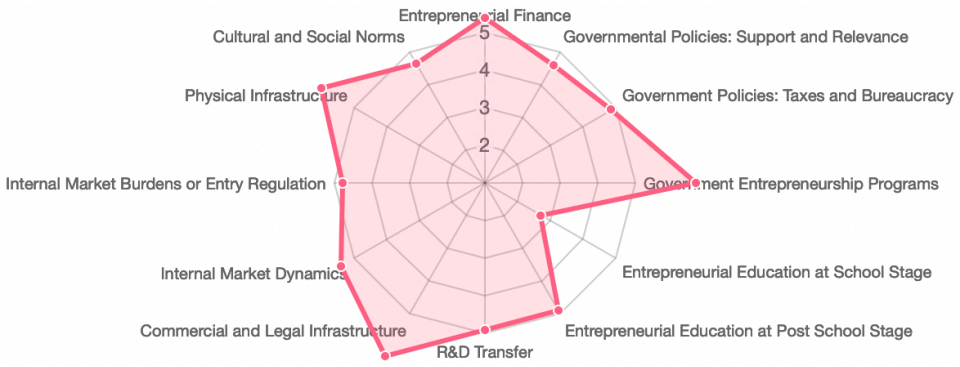


Source: Own depiction according to (Shukla et al., 2017, p. 28)

The 22nd German GEM Report presents a comprehensive analysis of entrepreneurial activities and perceptions in Germany during 2021. The report compares Germany's findings with those of 46 other participating countries and previous years' data. The study draws on data collected from 3,797 individuals selected at random, along with input from 74 experts in the field of entrepreneurship in Germany. The survey was conducted during the period from June to August 2021. The main results are illustrated in Figure 27. In 2021, key findings from the report reveal a rise in entrepreneurship rates, with Total Early-stage Entrepreneurial Activity (TEA) reaching 6.9 %, approaching the peak level of 2019 (7.6 %). Business closures in Germany are relatively low, with only 3.2 % of individuals selling, abandoning, or closing a business in the last twelve months, contrasting with higher figures in the USA and Canada. Younger age groups exhibit higher TEA rates, while migrant entrepreneurs demonstrate greater

ambition and innovation. Older respondents show more positive attitudes toward entrepreneurship and value their skills and experience for starting a business. In 2021, nearly half of the respondents identified favorable prospects for initiating a business in their region, with a gender-based disparity evident in this perception. The COVID-19 pandemic has additionally presented entrepreneurial possibilities and the strengths and weaknesses of Germany as a hub for entrepreneurship have experienced relatively consistent stability. During the pandemic, the gender disparity in startup endeavors constricted, especially among emerging entrepreneurs.

Figure 27: Entrepreneurial Framework Conditions Germany 2022



Source: (Sternberg et al., 2022)

Moving forward, it is essential to investigate how ordinary capabilities interact with dynamic capabilities in the context of digital transformation over time (Teece, 2017, p. 218). Additionally, exploring the relevance of new ventures in building dynamic capabilities for digitalization (Autio et al., 2018., p. 74) would contribute to the understanding of their role and purpose (Barreto, 2010, p. 259). An insightful comparison could be made between constructing dynamic capabilities with the guidance of consultants and doing so without consultancy. Moreover, considering the omnipresent digital technologies and evolving market dynamics, the origins of competitive advantage are becoming progressively uncertain (McGrath, 2013). Consequently, additional research is warranted to delve into the temporal role of digital transformation in sustaining transient competitive

advantage, especially in the MSP segment for this dissertation. Advancing in these directions would enhance the comprehension of the dynamic capabilities required for successful digital transformation and its implications for firms in various contexts.

These framework conditions encompass a range of factors, including regulatory environment, access to capital, market dynamics, technological infrastructure, and the availability of skilled labor. For MSPs seeking to develop innovative BMs that capitalize on digitalization, understanding and leveraging these framework conditions become crucial. A supportive regulatory environment can facilitate the adoption of new technologies and business practices, while access to capital can fuel investments in digital capabilities and expansion. Market dynamics, including customer demands and competitors, can guide MSPs in identifying new value propositions and service offerings. Furthermore, a robust technological infrastructure and skilled labor pool can enhance the MSPs ability to harness digital tools and deliver sophisticated services. By recognizing and aligning with favorable entrepreneurial framework conditions, MSPs can foster a conducive ecosystem for BMI, leading to the creation of sustainable, competitive, and digitally driven BMs.

2.4.3 Business Ecosystem Model

Business networking has a long-standing history, dating back several centuries. Initially, it comprised a loosely connected network of various organizations, some of which were as small as one-person entities. However, in the latter half of the 20th century, business challenges and the pervasiveness of business networks underwent significant transformations due to the advancements in social, economic, political, and technological systems according to Iansiti and Levien (2004, pp. 6-10).

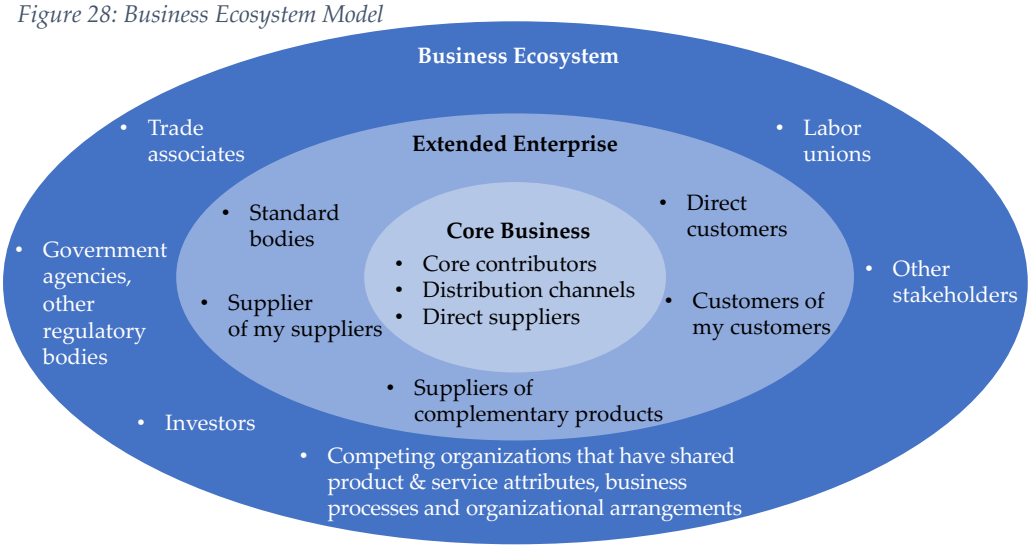
James Moore introduced the concept of the business ecosystem in 1993 (Moore, 1993, p. 26), defining it as,

"[…] an economic community supported by a foundation of interacting organizations and individuals—the organisms of the business world."

Within this environment, valuable goods and services are generated for clients who are themselves integral participants within the ecosystem. The entities within the community encompass suppliers, leading producers, competitors, and various stakeholders. Over time, these entities mutually evolve their capacities and roles, often aligning themselves with the directions established by one or more central entities. While the companies in leadership roles might change over time, the function of the ecosystem leader is highly esteemed within the community. This role empowers members to pursue shared visions, synchronize their investments and assume mutually supportive positions.

The business ecosystem forms a complex network comprising customers and intermediaries in the market, entities offering complementary products, suppliers, and the central company—often considered the primary species within this ecosystem. A representative illustration of a typical business ecosystem is presented in Figure 28. However, Moore (1996) does not extensively delve into the intricacies of ecosystem structure, roles, and networking. According to his perspective, ecosystems can manifest as either small-scale business initiatives or expansive arrays of enterprises, frequently with ill-defined boundaries. He underscores the evolutionary nature of these ecosystems, emphasizing their ongoing development, while also outlining the challenges associated with each stage of their evolution.

Figure 28: Business Ecosystem Model



Source: Own depiction according to (Moore, 1996, p. 27)

Drawing parallels with biological ecosystems, employs biological metaphors to describe business ecosystems. For analytical and management purposes, he divides the business ecosystem into four stages (Moore, 1996, p. 83):

- Pioneering,
- Expansion,
- Authority,
- Renewal (or death).

These stages serve as a roadmap for creating efficient and innovative value chains that outperform competitors, achieve market coverage, maintain uniqueness, and foster continuous improvement. In the Pioneer stage, the primary attention is directed towards crafting novel avenues of value creation alongside partners, capitalizing on efficient and innovative opportunities as well as introducing new paradigms. This stage lays the foundation for gaining a competitive edge and driving value creation. In the next stage, the Expansion stage, pioneers aim to disrupt the market by expanding their reach, introducing new offerings to a larger audience, and collaborating with suppliers and co-creation partners. Strategic focus on key market segments and channels ensures scalability, while openness to innovation remains crucial. As the ecosystem progresses in the third step to the Authority stage, it gains uniqueness and maturity. Maintaining collaboration, contribution and encouraging community-wide innovation become the primary objectives. Overcoming entry barriers through new technologies and substantial investments strengthen the ecosystem's position as an authority in the industry. Finally, in the Renewal stage, stakeholders critically assess the ecosystem's dependencies on external conditions compared to other ecosystems. Leveraging existing assets, such as loyal customers, skilled employees, and reliable suppliers, becomes essential. Innovators play a vital role in bringing new ideas and rejuvenating the ecosystem to ensure sustained growth. Continuous monitoring and analysis throughout the stages enable stakeholders to adapt and respond to market changes effectively. A compelling vision for the future motivates suppliers and customers to actively contribute to the ecosystem's improvement (Moore, 1996, pp. 77-83).

In conclusion, understanding the evolutionary dynamics of ecosystem formation is crucial for shaping sustainable value chains. By following the four

stages and embracing continuous monitoring, stakeholders can build successful and resilient ecosystems that stay ahead of the competition. James Moore's foundational work from 1996 provides a comprehensive framework to navigate the complexities of ecosystem development and foster long-term value creation.

Overall, the primary objective of business ecosystems is to meet customer needs (Graça and Camarinha-Matos, 2017, p. 632). This objective is achieved by continuously improving existing products and services, known as fundamental benefit through innovative adjustments. Hence, the participants within the business ecosystem leverage their core competencies and resources while seeking synergistic opportunities. Consequently, this collaborative effort can lead to competitive advantages and, in favorable instances, economies of scale (Hakala et al., 2020, pp. 16-20). In more critical scenarios, the survival of the business ecosystems becomes the ultimate goal (Iansiti and Levien, 2004, pp. 4-7). Furthermore, according to Ramezani and Camarinha-Matos (2019, p. 607), business ecosystems can be regarded as socio-economic systems.

Moore’s business ecosystem model provides valuable insights into BMI for MSPs in the context of digitalization for this dissertation. As described by Moore (1996), the business ecosystem comprises interconnected organizations and individuals collaborating to produce goods and services of value to customers. In the case of MSPs, this ecosystem encompasses customers, market intermediaries, complementary product providers, suppliers, and the MSP itself as the focal company. Understanding the interplay and dependencies among these ecosystem players becomes crucial in developing a resilient and adaptive BM for MSPs, especially in the face of digitalization. By leveraging their core competencies, MSPs can forge partnerships and exploit synergies within the ecosystem to enhance their services and meet evolving customer needs. Moore's focus on the evolutionary stages of business ecosystems further underscored the need for continuous adaptation and innovation in the MSP BM to thrive in the dynamic landscape of digital transformation.

2.5 Development of Hypotheses

Based on the problem outline and objective of this dissertation (Section 1.2), this section develops the hypotheses for the research. MSPs have become popular

for organizations seeking to outsource their IT services. MSPs provide various services, including infrastructure management, application development and support, and security services. However, despite the growing popularity of MSPs, there is a lack of understanding about their role in driving innovation and how their services differ from those of traditional IT service providers. Therefore, this dissertation aims to investigate the attitudes and perceptions of organizations toward MSPs, particularly in the context of innovation and security, to address this gap. The study also seeks to explore the future technologies organizations are interested in adopting and whether MSPs are well-positioned to support these technologies. Additionally, the dissertation examines the role of consultative selling in the success of MSPs and whether the company's size influences its willingness to work with them. Related to various aspects of the MSP industry and the technology landscape, the following hypotheses are built:

The first hypothesis (H1) focuses on the top two future technologies: cloud computing and AI. The theoretical foundation for the hypotheses is described in detail in Section 2.1. Cloud computing is one foundational technology for IT trends (Panetta, 2018). Additionally, cloud computing has advantages (e.g., more flexibility for the IT infrastructure and new cost models in switching from capex to opex). In terms of cost reduction and more agility, CEOs have cloud computing on their agendas, according to a McKinsey Digital study (2019). In addition, AI is one general IT trend (Panetta, 2018). This technology should help make better decisions in complex situations and support humans in specific knowledge domains (Rost, 2018, p. 559). These two technologies can help deliver a high competitive advantage while underpinning the digital transformation stated by Oswald and Krcmar (2018, pp. 5-10).

H1: The top two future technologies are: Artificial Intelligence and Cloud Computing.

The next hypothesis (H2) suggests that the size of a company does not influence its willingness to work with MSPs. Additionally, there was no indication in the literature review that the size of a company influences its willingness to work

with MSPs. Hence, SMBs and larger companies may be equally interested in working with MSPs for various reasons, such as cost-effectiveness, access to specialized expertise, and improved IT performance (Section 2.2.3). Overall, hypothesis 2 proposes that the size of a company does not affect its willingness to work with MSPs and challenges the notion that MSPs are primarily focused on SMBs. Focacci et al. (2013) mentioned that MSPs are more focused on SMBs, and the comparison of MSPs and ITO in their target market is illustrated in Table 12.

H2: The company size is not influencing the willingness to work with MSPs.

The third hypothesis (H3), that SMBs are more focused on innovation and security than larger companies, may have some merit. Section 2.2.3.3 described the focus areas of MSPs and IT provider related to their target markets. SMBs may have fewer resources and be more vulnerable to cybersecurity threats, making innovation and security a priority for them. While in the past, IT outsourcers were only used for execution, today, they are increasingly involved in business goals and innovation projects as a strategic partner (BSI, 2012, p. 79). Additionally, one of the success factors of MSPs, mainly targeting SMBs, is security, according to Smith and Kumar (2004, pp. 984-989).

H3: SMBs are more focused on innovation and security than larger companies.

The subsequent hypothesis (H4) posits that the most prominent obstacles to engaging with MSPs are linked to the maturity of impacted business processes and the potential loss of internal knowledge and expertise. The maturity of business processes refers to how well-defined and optimized a company's internal processes are, which can affect the effectiveness of outsourcing to MSPs. In addition, companies may be hesitant to work with MSPs due to concerns about losing control over their IT systems and the risk of losing knowledge and expertise that is critical to their business operations. These concerns were stated by Focacci et al. (2013). Outsourcing IT management to an MSP requires trust and a willingness to

relinquish some control over IT operations to an external organization, one of the threats described in Section 2.2.3.

H4: The two largest inhibitors to work with MSPs are the insufficient maturity of affected business processes and the fear of losing know-how.

The fifth hypothesis (H5) suggests that MSPs need to focus on consultative selling to succeed in the next five years. This hypothesis challenges the commonly held belief that consultative selling is critical to the success of MSPs. Riedl (2005) stated that consultative selling is a customer-focused approach that involves building relationships with customers and understanding their needs to tailor solutions to their specific requirements. Furthermore, in the value chain of the MSP BM (illustrated in Figure 13), consulting is included as a central component in the service layer.

H5: MSPs do need to focus on consultative selling to be successful in the next five years.

These hypotheses provide insight into various aspects of the MSP industry and the technology landscape shown in Figure 29. Testing these hypotheses can better understand the factors driving the success of MSPs and the factors influencing companies' decisions to work with MSPs. By testing these hypotheses, this dissertation aims to provide valuable insights into the role of MSPs in supporting innovation and security in organizations and the factors that influence their success. The results of this dissertation could have substantial implications for MSPs and organizations seeking to partner with them.

Figure 29: Overview of Hypotheses

Summary

Hypotheses

Technology Trends

H1:
The top two future technologies are: Artificial Intelligence and Cloud Computing.

Small and medium-sized businesses

H2:
The company size is not influencing the willingness to work with MSPs.

H3:
SMBs are more focused on innovation and security than larger companies.

Managed Service Providers

H4:
The two largest inhibitors to work with MSPs are insufficient maturity of affected business processes and the fear of losing know-how.

H5:
MSPs do need to focus on consultative selling to be successful in the next five years.

Source: Own depiction

3 METHODOLOGY

The third chapter describes the methodology of this dissertation. Firstly, the methodology used in the research study on digital transformation in companies is presented. The section is divided into three main sections. At the beginning there is an overview of three studies on digital transformation in companies provided, including the Digital Maturity and Transformation Report by the authors Berghaus et al., (2015), Digital Transformation of the Industry by Bloching et al. (2015) and the Digital Navigator by Weber et al. (2015). The key findings of these studies are also highlighted in this section. The approach of study analysis is used to show how companies are dealing with digitalization and digital transformation in the German-speaking market since 2015.

Additionally, the second section outlines the objective and method of the systematic literature review to answer the research questions RQ1-RQ2, which includes is underpinned by a theoretical analysis in this section.

The third section describes the research instrument used in the dissertation, which is a quantitative questionnaire. This encompasses both quantitative research methodologies and the details of the questionnaire development process. The focus directed toward the quantitative research methodology used in the study, aiming to uncover patterns and relationships through structured data analysis. Additionally, the development of the questionnaire is described, emphasizing its design and content to ensure accurate data collection aligned with the research objectives. The process of collecting, collating, and analyzing data is detailed, providing insights into the statistical techniques and methods employed to draw meaningful conclusions from the collected data. Through this empirical investigation, the own study aims to substantiate its hypotheses and highlight the relationship between the theoretical constructs explored in the earlier sections of this dissertation.

3.1 Studies on Digital Transformation in Companies

Section 3.1 offers a synopsis of research that illustrates the influence of digital transformation in corporations. The empirical findings can be compared with own research findings, which are explained in Chapter 4. This approach is scientific research of the second order, because the analysis of the data is from the secondary source (Döring and Bortz, 2016, p. 191)

Showing various studies (Berghaus et al., 2015; Bloching et al., 2015 and Weber et al., 2015) about the impact of digital transformation on companies aim to demonstrate the current status quo in the German-speaking area. The individual studies are presented below including the main findings for this dissertation.

3.1.1 Study I: Digital Maturity and Transformation Report

The focus of this first study with the title "Digital Maturity and Transformation Report" (2015) is on the operational implementation of digitalization. The study was made by the authors Berghaus et al. (2015). First, they did e-mail interviews with 18 people from various industries. Afterwards, they finalized case studies and did additional 15 interviews in five companies. The study took place between September and December 2015. The results are based on 15 case studies and show that companies are not under pressure to act for their own transformation.

However, long-term it is the aim for the corporates to remain competitive and that is only possible with the digital transformation of BMs. Furthermore, they are aiming for cost efficiency, innovation goals and it is important to meet their client needs. All the interview partners agree that digital transformation is a holistic change project and that is why it is necessary to find the right balance between innovation and risk. The study moreover shows that internal and external resources should be part of the innovation projects - with the help of pilot projects - to drive digital transformation.

The study is demonstrating that corporates are starting with digital transformation projects. However, not one interview partner has point out concrete targets to drive innovation, but all are aware they need to change due to new market conditions or new competitors. The study shows that digital transformation

are long-term projects and corporates need to make resources available for the implementation (Berghaus et al., 2015, pp. 1-3).

3.1.2 Study II: Digital Transformation of the Industry

The second study by Bloching et al. (2015) with the title "Die digitale Transformation der Industrie, empirische Studie zur digitalen Transformation" was concentrated on a total of 300 top managers in the industry sector in Germany. Additionally, 22 expert interviews were included to focus on the digital transformation, especially in Germany.

The digital transformation of the industry offers opportunities and challenges, and it calls for joint actions in Europe. For the competitiveness a regulated framework is needed with high-performance information and communication infrastructure. The study is asking for a proactive approach to standardize the digital economy.

The empirical study shows that most of the experts concentrate on digital transformation within their company. However, their primary objective is cost efficiency and reduction. Furthermore, only one-third of the companies, who participate in the survey, rank their selves in terms of digital maturity as high or very high. In order to increase the value creation, corporates need to become more digitally mature, and this require an understanding of digital trends, disruptive market companion, and BMs. Companies need to make resources available and analyze the existing BM to realize new opportunities in the market (Bloching et al., 2015).

3.1.3 Study III: Digital Navigator

In the third study "Digital Navigator - Handlungsfelder der digitalen Transformation und Stand der Digitalisierung im deutschsprachigen Raum" by Weber et al. (2015) more than 80 corporates out of three industries in German-speaking countries were in the focus. The three sectors are: IT, Manufacturing, and Service. The main audience of the online survey were executives, board members and managing directors, who were surveyed over several months.

The empirical results show that the companies out of these three sectors are interested in six specific areas. The ranked top three are innovation, digital process management, and digital information management.

In a conclusion the survey results demonstrate that innovation is the most important factor, which demonstrates that corporates are open for change and the implementation of new BMs or the development of the current BM. Additionally, the areas digital process and digital information management are key for the value creation of a company. Corporates are considering scalable and agile processes to increase the usage of technology, e.g., regarding the automation of processes (Weber et al., 2015, pp. 1-6).

3.1.4 Key Findings

The findings of studies researched from (Berghaus et al., 2015; Bloching et al., 2015 and Weber et al., 2015) shown earlier indicate that digitalization for corporates is easier with the help of professional IT providers, who help corporates to focus on the core competences. However, it can be stated that not all corporates are prepared for the digital transformation and need to make sure that resources - internal and external - are available to support the transformation process within the company (Berghaus et al., 2015). New data sources, networking, and automation are disrupting existing BMs. Corporates need to analyze their product portfolio, the client needs and increase the digital maturity to identify fast new market opportunities (Bloching et al., 2015). According to Weber et al., 2015 significant action areas include agile approaches to identify innovation potential and implement change. A successful digital transformation is not achieved with the help of new technologies. The new process of value creation relates to agile processes in the corporate as well as the sensible handling of data. During the last years corporates have realized the potential and the value of their existing data (Berghaus et al., 2015; Bloching et al., 2015 and Weber et al., 2015).

Consequently, the cited studies will serve as exemplars for the own research, which pertains to the current requirements of corporations for their IT provider in the context of MSPs. Moreover, the studies should contribute to underline the key requirements for the IT sector, which are explained in the own research in Chapter 4.

3.2 Systematic Literature Review

3.2.1 Objective and Method

The study conducts a mapping review to provide an overview on current innovative BMs and related research in the IT managed service sector. MSPs are IT companies offering a defined service package to their customers frequently based on a flat monthly fee, e.g., hosting, private networking, Voice over IP, internet access, and network security (Wattal, 2020, p. 1). The mapping review provides an academic framework for the classification of BMI in the MSP sector and outlines academic research gaps. It also supports practitioners in the development of novel BM by providing an analysis of the most recent innovative trends. The subsequent set of study inquiries should be addressed in accordance with research questions one to two:

RQ1: What theories, methods, and data have been used in empirical academic research on BMI in managed IT services, and what classifications have been reported in current academic research for these two areas?

RQ2: Which research gaps should future academic research work on to advance insights in BMI in managed services?

The study uses a mapping review methodology as suggested by Arksey and O'Malley (2005), which classifies as apt for the research aim of this study among a plethora of literature review methods (Xiao and Watson, 2019): Systematic reviews (e.g., Meta-analyses (Glass, 1976, Sandelowski et al., 2007)) covering a broader range of studies usually using quantitative methods are adequate when a very larger number of similarly designed studies is meant to be compared. A mapping review is a comparatively recent approach to provide a non-quantitative overview on a scattered study field and has been gaining in importance with the expansion of research volumes and ranges in the internet age. It classifies in the field of scoping studies (Mays et al., 2001, p. 194), which generally aim a rapidly probing into innovative areas of research and are often applied to prepare more specific systematic research in a part domain. Following the stage of defining the research questions, relevant studies in the research field of BMI in the MSP sector have to be

identified, selected, charted, and reported on in a systematic form (illustrated in Figure 30). To focus on academic and validated research the following academic databases were scanned:

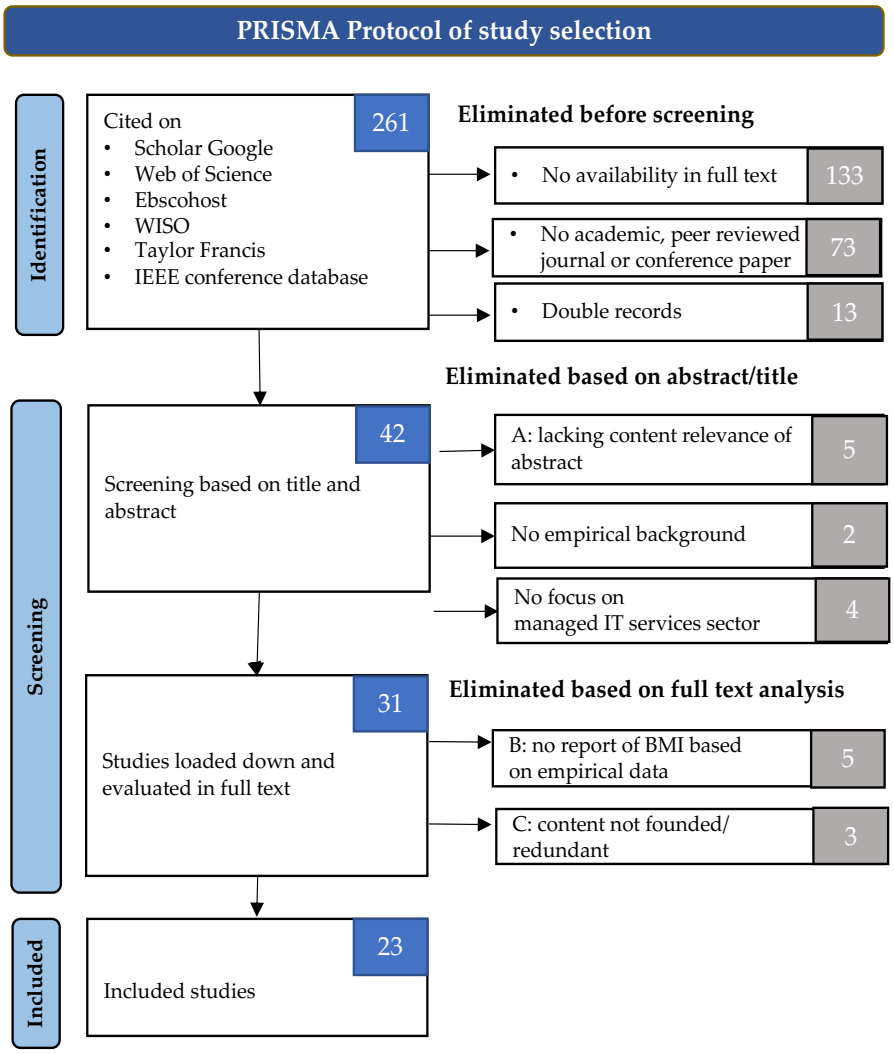
- WISO (http://www.wiso-net.de/),
- Ebscohost (https://www.ebsco.com/),
- Science Direct (http://www.sciencedirect.com/),
- Taylor Francis (http://www.tandfonline.com),
- Web of Knowledge / Web of science (http://webofknowledge.com/),
- IEEE conference database (http://www.ieee.org/conferences/),
- Scholar Google (http://scholar.google.com).

After selecting appropriate databases, the search was defined. It is the aim to find suitable articles for the two areas of MSP and BMI. The following search terms are defined:

- "IT Service Provider" OR "Managed Service Provider",
- "B2B",
- "Business model innovation" OR "Innovation",
- "Empirical".

The research is initially limited to publications in English and as to publication time, which comprises the years 2017 to 2023, to ensure topicality of results given the highly dynamic environment of the IT service sector, which has undergone significant changes with the emergence of industry 4.0, AI, data clouds, and blockchain technologies (Hardjanto, 2022, pp. 513-520; Shrivastava et al., 2021, pp. 3471-3475; Mu and Wang, 2020, pp. 197-199).

Figure 30: PRISMA Protocol of Study Selection



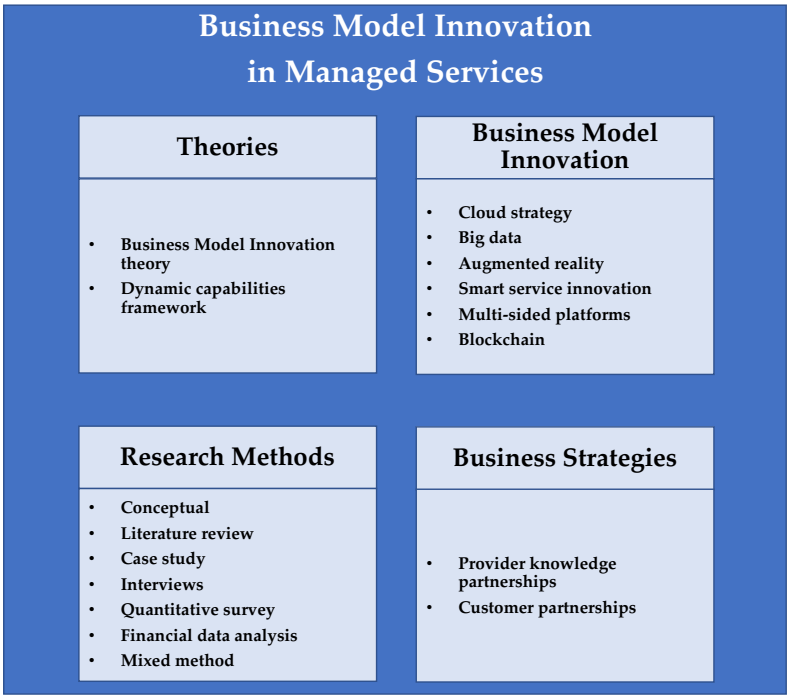
Source: Own depiction

3.2.2 *Theoretical Analysis*

Applying the above research string 261 studies are identified in the mentioned databases. Since detailed analysis of the study contents is required, studies not available in full text are discarded (n = 133). To deselect non-academic studies publications outside of peer-reviewed academic journals or conferences (n = 73) are not considered either. Double records in several databases are also

eliminated (n = 13). 42 studies remain for further screening based on the titles and abstracts. Studies are deselected after reading through the abstract, if they obviously do not fit in content (five studies), have not got an empirical background (two studies) or do not focus in the managed IT services sector (four studies). Again, studies not referring to BMI (n = 5) or not founded in content (n = 3) are discarded. 23 studies remain for final analysis. This preselection process grants that only high-quality research in BMI in the managed services sector is considered. The mapping process is based on the principles of grounded theory, which suggests to systematically evaluate qualitative data in an inductive bottom-up way to stick as tightly to the original reports as possible, develop an emerging theory directly from the data and thus possibly avoid researchers' biases (Glaser and Strauss, 1967, p. 95; Dunger et al., 2015, pp. 11-15). The major coded categories comprise major applied theories and methods, BMI concepts, and strategies of managed service providers (RQ1). Find an overview of the results in Figure 31 and more details in Appendix A.

Figure 31: Systematic Literature Review Results Overview



Source: Own depiction

In correspondence with the research aim, 20 of 23 selected studies have got an empirical focus: Nine are based on case studies usually involving one or few in-depth business analyses. Six conduct interviews with involved founders or managers of managed service providers. Two studies are based on a quantitative survey or on financial data analysis, two apply a mixed methodology of interviews and quantitative survey. Two major theory-fields are identified in the mapping process: BMI theory and dynamic capabilities theory.

BMs generally describe the way in which businesses create value, addressing the resources they use, the processes, strategies, and equipment they apply, the products and services they delivery and the customer fields they address (Venkatesh and Singhal, 2017a, p. 2). BMI correspondingly represent innovative approaches to doing business due to novelty in products or services, organizational processes, structures, and relationships, which are capable of creating entrepreneurial value, e.g., competitive advantage and growth (Amit and Zott, 2012, p. 41). In a digital world, for instance, product innovations like 3 D printing, big data, and augmented reality harbor multiple opportunities for BMI projects: Entrepreneurs could target at the development or marketing of innovative products (Clohessy et al., 2017, p. 2).

The dynamic capabilities framework has its roots in Penrose's resource-based view of the firm, which underscores that businesses prosper due to extraordinary resources or more frequently by bundling a specific set of general resources to make a new value proposition (Penrose, 1959 / 2009; Wernerfelt, 1984). While Penrose's original research referred to material and immaterial resources equally, the follow up knowledge-based perspective has worked out that in an age dominated by informational advancements, idiosyncratic knowledge resources are a central foundation to business success and BMI (Thomas and Pollock, 1999, p. 136). The term "dynamic capabilities" was coined by Teece et al. (1997, p. 516) and refers to a set of mainly immaterial competencies that enable businesses to flexibly adjust to a rapidly evolving market environment (Teece et al., 1997, pp. 516-518). Dynamic capabilities are difficult to develop and transfer and in combination with complimentary assets, e.g., capital, and subject knowledge, they enable companies to advance in highly innovative environments (Devi et al., 2022, p. 500). Dynamic capabilities are mental competencies endowing firms with the strength and perseverance to survive in rapidly changing markets due to high adaptiveness,

mental flexibility of its leaders and the virtue of quickly adopting emerging technological fields and utilizing them for BMI. Due to the necessity of directly appealing to customers in the process of service delivery, continuous creative innovations that are adaptive to changing customer requirements, are a recipe to business success (Ghoshal et al., 2018, pp. 127-129). In managed services, customer requirements and managed providers' service offers merge in a process of co-creation and co-value destruction, which is characteristic for radically innovative developments (Pathak et al., 2020, p. 4).

BMI theory and the dynamic capabilities framework prove as complimentary approaches to reveal the strategies and success conditions underlying BMI in the managed IT services sector.

In 2017, Venkatesh and Singhal conduct a comprehensive literature review of BMI in the MSP sector, which comprises publications from 2008 to 2016. The major output are customer requirements that invite BMI in managed IT services and challenges to establishing corresponding BMIs.

Since that publication, obviously, a range of novel IT technologies, namely, cloud storage (Levy et al., 2022; Clohessy, 2017), big data (Khalife, 2019; Mortati et al., 2023), augmented reality (Mattila et al., 2018), blockchain (Klöckner et al, 2022) and virtual platform technologies (Pousttchi and Gleiss, 2019, Poeppelbuss et al., 2022; Schneider et al., 2017; Schaffer et al., 2021; Oettl et al., 2018) - have emerged and have motivated managed services BMs using them. Data clouds provide further potential for managed service BMIs (Levy et al., 2022, p. 3 f.): Cloud computing means a fundamental change to data storage and provision in virtual networks. Service innovation redefines established patterns of delivering services by using new resources and new knowledge so that an innovative service outcome is perceived by the customers or new customer segments are created (Anke et al., 2020, p. 600). Poeppelbuss et al. (2022, p. 599) referred to smart service systems for services in digital technologies relying on smart products respectively,

"[…] physical objects with embedded digital systems […]",

e.g., sensors and computers, that are capable of integrating individuals and organizations to co-create value. Augmented reality employs virtual reality techniques to mediate an enhanced understanding of the real world, e.g., integrates

virtual three-dimensional interior images and videos to enable a more detailed understanding of real objects visible from the outside only (Chen et al., 2019, p. 2). Businesses also use augmented reality features in product marketing to involve customers more intensely and mediate a three- or four- dimensional feeling of the end product, particularly when the latter is made to order e.g., not available at the moment of buying (Chylinski et al., 2020, pp. 375-377). By integrating several innovative technologies - e.g., Cloud big data management, smart service innovation and virtual or augmented reality techniques - managed service innovation gradually extends to managed multi-sided platforms and value networks (Pousttchi and Gleiss, 2019, pp. 609-615). Ghoshal (2018, pp. 135-138) supposes that the involvement of a series of actors and the co-integration of customers in the value creation process is a typical characteristic of BMI in managed IT services, since the involved novel technologies are all aiming multi-dimensionality, e.g., integrating actors, businesses, and whole business fields in a comprehensive informational grid (Schneider et al., 2017, pp. 111-114).

Thus, MSPs overcome the challenge of system compatibility in entrepreneurial networks and provide all partners with a comprehensive IT architecture for data interchange, storage, and communication (Poeppelbuss et al., 2022, pp. 609-611). As Schaffer et al. (2021, pp. 3-10) detail within the framework of a single case study, comprehensive IT platform management emerges from software-as-a-service projects and gradually advances to comprise the whole entrepreneurial ecosystem to finally deliver a comprehensive platform for all workflows, departments, systems, and processes. Klöckner et al. (2022, p. 60) spot the blockchain technology as a disruptive emerging BM accomplishing MSPs comprehensive platform strategy: A block is a digital data set located on the internet.

To summarize the systematic literature review (Section 3.2) it provides insight into the comprehensive area of BMI in managed services, which starts from stand-alone solutions for data storage and interchange (clouds), data collection and analysis (big data technologies), and virtual or augmented reality and advances to gradually permeant the whole entrepreneurial value chain, e.g., by delivering smart services. As soon as a network of businesses relies on the offer of a single provider, the transaction costs of switching provider increase exponentially, which

endows managed IT services businesses with high pricing power and influence in all business fields (Levy et al., 2022, p. 22). Returning to the concept of BMI as a strategy to radically change the existing market by disruptive innovations, the approach of integrating a series of high-end technologies to a comprehensive IT platform in the B2B sector can in fact endow first moving services providers with a moat enabling exponential growth and a singular competitive positioning. As soon as a single company has managed to establish as a market leader in the multi-platform managed service sector, imitators and followers will find it hard to advance to a similar competitive stance. Knowledge partnerships are critical for MSPs and they must rely on a series of innovative technologies to build up a comprehensive inter-business networking platform that attracts business customers effectively due to technological superiority and excellence. Academic knowledge, however, is freely accessible to competitors and not protected by patents, which can prevent that adopters advance to a unique market positioning by university partnerships alone (Levy et al., 2022, p. 5 f.)

Regarding the consultative selling approach: To establish a unique market positioning, MSPs should not neglect their customer -relationships (Pathak et al., 2020, p. 4). Several studies address the key word of customer-provider co-creation from an early development stage onwards: IT services are customer specific. To enable effective application at the customer level a development to the requirements of the customer from an early development stage onwards is pivotal (Poeppelbuss et al., 2022, p. 602 f.). Consultative selling has proven as a strategy to establish and continuously cultivate close customer connections in the managed service sector: It focuses on customer issues in the selling process. Consultative selling has proven as an effective strategy in CRM and is targeted to extend customer relationships form the development process to the phase of utilizing the service. Service providers thus advance from push toward attraction marketing (Levy et al., 2022, p. 13 f.): Customers proactively address service providers, when novel solution or adaptations are required, and providers adapt their products to changing customer demands.

Most studies are focused on service and product innovations, but neglect that these solutions have to be integrated to meet market demand and address the requirements of business customers concretely. Based on a mapping review, this study has provided an overview of current research on BMIs in the managed

service sector. As for RQ1, two major theories guiding academic research have been identified: BMI theory and the dynamic capabilities framework. Both research approaches are complimentary: BMI in the managed service sector build on providers dynamic capabilities e.g., the ability to adapt to changing market conditions and customer requirements flexibly and proactively. In terms of RQ2: Further research should integrate both theories to advance research at the intersection of BMI and customer orientation in the MSP sector.

As for RQ1, the review has found a series of innovative technologies enabling BMI in managed services due to their novelty, high technological sophistication and required knowledge base for development and professional operation e.g., cloud storage and processing services, big data collection and analysis services, virtual and augmented reality services. To establish a unique market position and moat, however, providers should attempt to advance to platform providers integrating a possibly broad range of IT services.

Additionally, for RQ2: While the majority of retrieved studies discusses technologies enabling BMI in managed services to extent, strategies how MSPs can implement product innovations in the market are not in the focus of empirical research so far. A synthesis of available discussions suggests that the combination of knowledge partnerships on the development and provision side and customer partnerships on the demand side is a sustainable approach to establish a unique position in a dynamically evolving market.

Further academic research should be directed to implementation strategies for innovative BMs in the managed service sector more systematically. Qualitative empirical groundwork to explore the strategic resources MSPs use to build and stabilize their customer relationships is desirable to understand BMI processes in a business sector depending on co-creation of suppliers and customers to innovate.

3.3 Empirical Study

3.3.1 Quantitative Research

The main purpose in this research to gather expert and manager knowledge on the BM of MSPs in DACH. To obtain the necessary information on how MSPs should position themselves in the future to continue to be successful in the market,

a primary survey will be conducted. Therefore, a questionnaire is built to conduct the quantitative research. First, the objective of the detailed statistical analysis is discussed, followed by the methodological principles for data collection and analysis. Finally, a reflection on the methodological quality of the research is given.

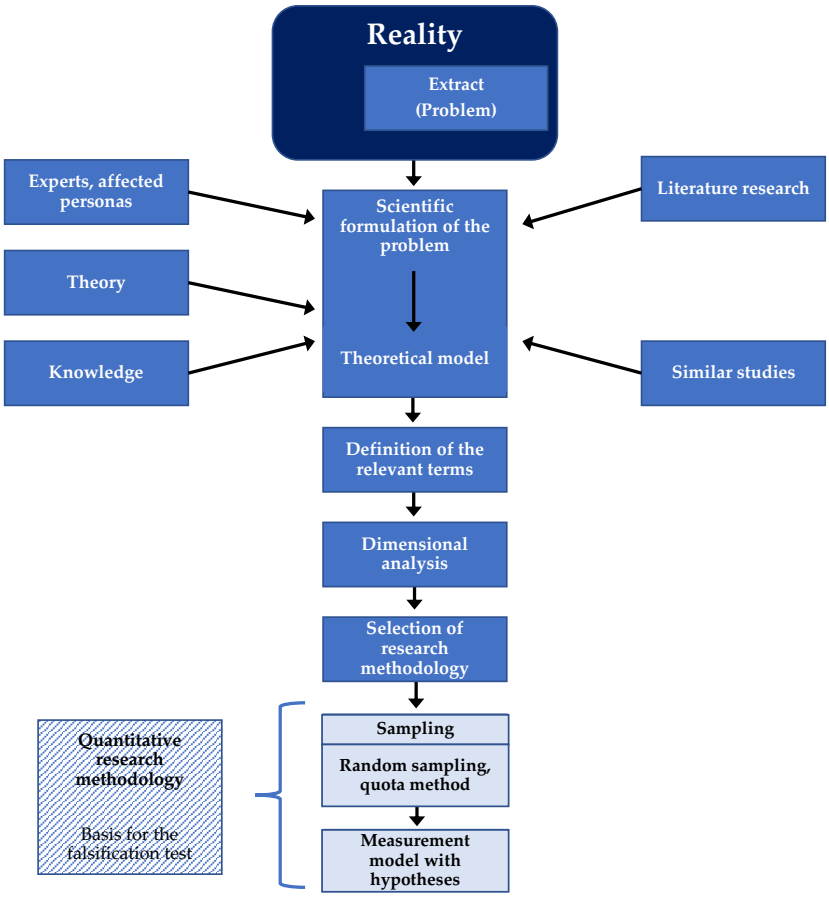
In principle, there are four methods for collecting primary data: interviews, observation, experiments, and content analysis. In addition, there are different execution options for each method. The presented research questions (Section 1.3) and hypotheses (Section 2.4.3) make clear that the methods observation, experiment, and content analysis are not appropriate for this dissertation. Exclusively the questionnaire can be selected as a suitable method and social science research requires appropriate methods of data collection to ensure accuracy and reliability. The aim of the quantitative research approach is to make generally valid statements. The approach is deductive. Questionnaires are proper for quantitative data collection because they are theory-based, structured, and highly standardized. Therefore, one of the most popular methods of data collection is the quantitative questionnaire approach. This approach involves collecting data from a large number of participants through standardized questionnaires (Döring and Bortz, 2016, pp. 93-97). The overall approach is shown in Figure 32.

One of the major advantages of the quantitative questionnaire approach is its ability to collect large amounts of data from many participants. This approach is particularly useful in studies that require a representative sample of a population. It also allows for easy analysis of data through statistical methods, making it easier to draw conclusions from the data.

Another advantage of the quantitative questionnaire approach is its ability to ensure standardized data collection. Utilizing standardized questionnaires ensures that all participants are presented with identical questions in a consistent format, reducing bias in responses. This makes it easier to compare and analyze data collected from different participants and ensures the reliability of the findings. Furthermore, the quantitative questionnaire approach is a cost-effective method of data collection. It is relatively inexpensive to create and administer questionnaires compared to other methods of data collection such as interviews or focus groups. This makes it an ideal method for researchers working within budget constraints (Döring and Bortz, 2016, pp. 97-100).

Despite its advantages, the quantitative questionnaire approach has some limitations. One of the main limitations is the potential for low response rates or non-response bias, which can affect the validity of the findings. To mitigate this, researchers can use various strategies such as follow-up reminders or incentives to encourage participation and improve response rates. Another constraint involves the likelihood of social desirability bias, whereby participants might offer socially acceptable answers instead of their genuine viewpoints. Researchers can mitigate this by ensuring anonymity and confidentiality of responses and by using appropriate wording and phrasing of questions (Hauser and Humpert, 2009, pp. 25-28).

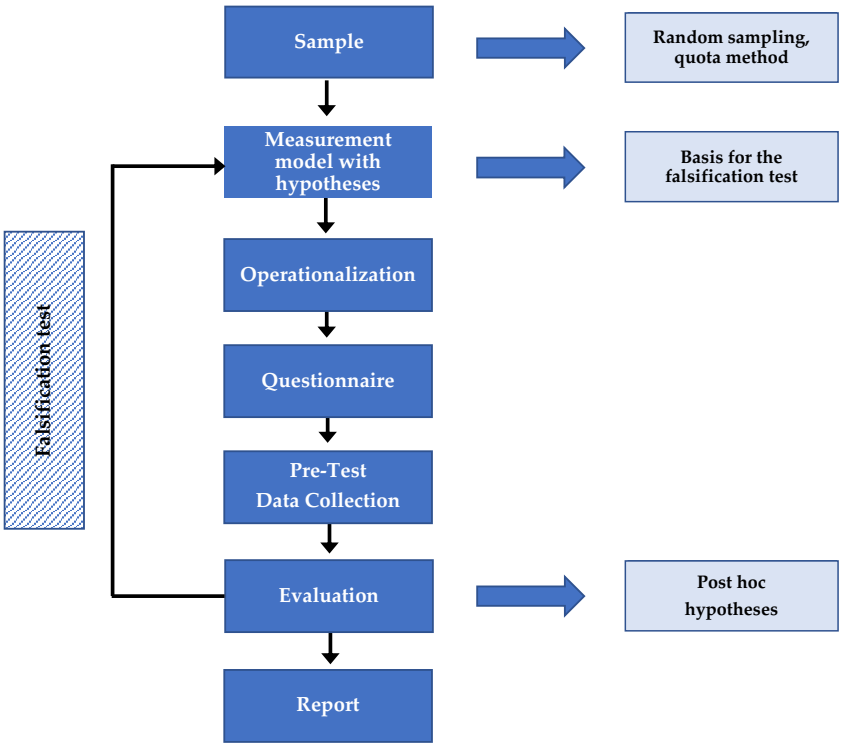
Figure 32: Approach to Model Building in Quantitative Research



Source: Own depiction according to (Mayer, 2013, p. 30)

For this dissertation, the survey method of the standardized questionnaire was chosen. The procedure can be seen in Figure 33. The starting point is sampling, followed by completion of the dimensional analysis and development of the measurement model, which contains assumptions about the relationships between the individual characteristics (variables). This forms the basis for the final evaluation. Concrete questions for measuring the corresponding characteristics or variables are a necessity here. Therefore, the variables are operationalized accordingly. The variables are resolved dimensionally according to a definition, which often requires several questions. Before the survey can be conducted, a pre-test must be conducted. This checks the comprehensibility and completeness of the questionnaire. In this quantitative study, the questionnaire is provided by e-mail or an online link. For the evaluation of the completed questionnaires, a coding is used to finally perform the processing with a statistics program (Mayer, 2013, pp. 58-60).

Figure 33: Quantitative Research from Sample to Report



Source: Own depiction according to (Mayer, 2013, p. 58)

Neither in qualitative nor in quantitative research is it possible to survey the population completely. The population is the total set of individuals, cases, and events to which the study is to relate. The sample is to be selected in such a way that the values of the characteristics within the sample, differ as little as possible from the population. This should make it possible to draw conclusions from the sample to the population. The objective is that conclusions can be drawn from the sample to the population (Mayer, 2013, p. 59 f.).

For the random sampling it is necessary to have the same chance to be part of the selection. The foundation is to have the complete population e.g., in form of a list. For this research the author does not have a complete list of all companies in Germany. However, the stratified sampling is used, because the characteristics of interest are very heterogeneous but consists out of relatively homogeneous subgroups (Mayer, 2013, p. 62).

In order to answer the research question and test the hypotheses, the collected data are analyzed using statistical methods. The generation of data for answering the hypothesis is done by online questionnaire. Following a brief explanation of the choice of method, the following sections describe the development of the questionnaire and its pre-test. In addition, the sample of the online survey is described. The data collection was done by means of electronic online survey, which was created with the help of the tool “SurveyMonkey”.

An informative introductory text is important to motivate participants to fill in the form and to allay any fears they may have. Care should be taken to make it clear to the participants that their data will be treated anonymously and will not be passed on to third parties. With these measures it is tried to inhibit the possible fear of the participants that they could be evaluated with this questionnaire and expect negative consequences. This should have a positive effect on the response rates. In regard to the responses there are three elements essential: response curve, response rate, and response statistics. The response curve measures the quantity of responses in a specific time frame. Döring and Bortz (2016, p. 412) stated that the response curve is high if the survey is available on a mobile device or online. However, the willingness to respond will go down after approximately one week. The response rate describes the number of completed questionnaires after the survey phase. As a rule, this rate is 5-40 %, which depends on various factors such as distribution channel, target group, length, and duration of the questionnaire or incentivization

for the participants. The aim for this study is to get a response rate of approximately 10 % to be in line with the recommendation of Döring and Bortz (2016, p. 412). In this study the response statistics is not analyzed. In general, this KPI helps to identify characteristics of survey responders and non-responders to compare e.g., sociodemographic features (Döring and Bortz, 2016, p. 412).

3.3.2 Development of the Questionnaire

The aim of the survey is to find out the critical factors for MSPs they should focus on to be successful in the future. A questionnaire is built on scientific literature research to underpin the theoretical framework of this dissertation and according to the developed hypotheses. Furthermore, existing surveys from the last years (2019-2022) on similar thematic areas have been used as foundation. In addition to that, the target audience of the studies from 2015 (Section 3.1) and the existing surveys were compared, to address with the own research established companies and individuals in management positions. Table 16 is reflecting the mentioned surveys.

Table 16: Surveys covering similar thematic Areas

Title	Content	Author	Year	Markets
Managed Services 2022	Digitalization and Cloud services inspire MSPs	NTT DATA	2022	Germany, Austria, and Switzerland
Managed Cloud View 2021	Business requirements to optimize market opportunities	IDG Research Services	2021	Worldwide
Managed Services 2020	Potential service opportunities (e.g., Cloud services, Digitalization)	IDG Research Services	2020	Germany, Austria, and Switzerland
The Impact of COVID-19 on Cloud Managed Service	Concerns and new potential service opportunities	Gartner	2020	Worldwide

Title	Content	Author	Year	Markets
Provider Strategy				
Data Nation Germany	Focus German Technology Sector	Deloitte	2019	Germany

Source: Own depiction according to (Deloitte, 2019; Gartner, 2020; IDG Research Services, 2020, 2021; NTT DATA, 2022)

The survey "Managed Services 2022" with the content around digitalization and Cloud services was executed by NTT Data in the year 2021. The target audience were Top IT Executives of companies in the DACH region (Germany, Austria, and Switzerland). They included as well strategic IT decision-makers in the C-level area and Line of Business (LoB) specialists. Overall, they targeted 314 individuals between December 13th and 21st 2021 with their online survey. The focus was on the present and future of managed services. Additionally, they focused on aspects relating to the choice of provider and the concrete expectations that companies have of their service providers today (NTT DATA, 2022).

In 2021 IDG Research Services did a global survey which showed challenges MSPs are dealing with in a highly competitive market. They targeted 1,500 companies including IT and LoB contacts across six large countries. Companies are searching for public cloud offerings and innovative technologies (IoT, edge computing or blockchain). Clearly there is a shift to move applications and IT infrastructure to the cloud and use services of MSPs (IDG Research Services, 2021).

Additionally, IDG Research Services did a survey with the following publishers COMPUTERWOCHE, CIO TecChannel, and ChannelPartner. The focus was as well on the DACH market and Top IT decision-makers of companies. They included strategic IT decision-makers and C-level contacts. Sampling was employed from the IT decision-maker database of IDG Business Media, followed by issuing personal email invitations for the survey. IDG targeted 346 contacts between March 23rd and 30th 2020. During the evaluation period companies absolutely trust their IT Service Providers and were very satisfied with their performance and services (IDG Research Services, 2020).

In June 2020 Gartner published a global analysis on the "The Impact of COVID-19 on Cloud Managed Service Provider Strategy". The key findings were that the pandemic is prompting companies to turn to MSPs to address concerns about cash flow, profitability, business continuity, and security. New service opportunities came up for the BM of MSPs such as workspace setup, data analytics, and management of SaaS offerings (Gartner, 2020).

Deloitte executed a survey in 2019 about the "Data Nation Germany". This one focused on Germany only. They analyzed the technology trends and investments in digital growth areas. The following technology trends were identified: IoT, 5G, analytics, artificial intelligence, and new "as-a-service" offerings. It stated that the technology sector is already integrated in other sectors and because of the engineering background in Germany companies have a strong history of technological expertise (Deloitte, 2019).

Based on the named surveys (Table 16) the author created an own questionnaire and has four parts of survey questions (SQ). The standardized questionnaire (Mayer, 2013, p. 58) was created for the quantitative research (Döring and Bortz, 2016, p. 405). The questionnaire included pre-formulated answers to have the possibility to link the answers to the hypotheses (H1-H5) and research questions RQ3-RQ4.

The introduction to the survey questionnaire and the questionnaire itself can be found in the Appendix B. The first section of the questionnaire begins with an introductory part of general questions obtain eligibility criteria for evaluating the participant (SQ1-SQ6). The next parts include statements developed based on the hypotheses, most of the questions are ranked with a Likert scale (Döring and Bortz, 2016, p. 269). The scale includes the following options "Strongly agree", "agree", "neutral", "disagree", and "strongly disagree". This is used to allow the participants to express how much they are aligned or disagree with the statements. Furthermore, for a to make it more user-friendly the responses offered a choice of five pre-coded answers. This also allows a quick ranking within complex questions.

The second part is about the IT Strategy of the company (SQ7-SQ10). More information about the services of MSPs and company's inhibitions of working with IT provider are reflected in the third part of the questionnaire (SQ11-SQ15). Furthermore, in the fourth part are information about digitalization and technology trends now and in the future (SQ16-SQ20). The main sources for the questionnaire

development are summarized in Table 17. As additional information it is illustrated to which hypotheses or research question each sub-question is related.

The pursuit of establishing the validity and reliability of the dissertation is underpinned by a judicious synthesis of data derived from both consulting company surveys and scholarly academic studies. By comparing insights from surveys conducted by reputable consulting entities, a nuanced comprehension of prevailing industrial trends, pragmatic viewpoints, and contemporary market dynamics is achieved. These surveys, characterized by their real-world orientation, supplement the contextual landscape of the research inquiry. Concurrently, a robust scholarly foundation is cultivated through a meticulous examination of peer-reviewed literature, theoretical frameworks, and methodological exactitude. This symbiotic amalgamation engenders a multi-faceted analytical approach, thereby corroborating the constancy of research findings across disparate data origins. In this dissertation a valuable methodological approach has been developed by integrating the realms of studies on similar thematic areas and academic studies. This approach harnesses tangible real-world insights derived from the experience at IBM, underpinned by unwavering truthfulness, and combines them with the rigor of academic research culled from preeminent journals in the field, such as "The Journal of Strategic Information Systems", "Journal of Product Innovation Management", and "Industrial Marketing Management". The fusion of these domains has been executed effectively through a systematic procedure. Thus, research is clearly properly grounded, with regards to existing academic knowledge and practical experiences. This procedure commences with the judicious selection of a research topic that harmonizes seamlessly with both the stringent academic requisites and the pragmatic challenges encountered within the consulting sphere (Deloitte, 2019; Gartner, 2020; IDG Research Studies, 2020 / 2021; and NTT Data, 2022). The chosen topic is characterized by its timeliness, relevance, and its inherent potential to enrich both the academic discourse and industry practices. The initial step involves undertaking a comprehensive review of the existing literature. Firstly, it facilitates an in-depth comprehension of the extant academic theories and research pertinent to the chosen topic of BMI for MSPs according to e.g.; Focacci et al. (2013), Zuehlke and Roevekamp (2004), and Berghaus et al. (2015).

Concurrently, this literature review aids in the identification of critical gaps within the body of knowledge, particularly those areas that pertain to consulting experiences. These identified gaps are instrumental in framing the research study, ensuring that it addresses pertinent issues and contributes meaningfully to the scholarly and practical realms.

Furthermore, scholarly investigations furnish theoretical profundity, methodological rigor, and a discerning perspective, thereby amplifying the scholarly integrity of the research methodology. By harmonizing perspectives gleaned from consulting surveys with those emanating from the academic realm, a comprehensive analytical framework is forged, thereby concretizing the veracity, applicability, and scholarly rigor of the dissertation. In the results section (Chapter 4) the ramifications of the conducted survey are compared against the corpus of data derived from the five surveys, along with the conclusions. The primary purpose of employing this analytical approach is to identify both similarities and potential differences that exist in how research outcomes are presented.

Table 17: Overview Survey Validation based on Main Sources

Sub-questions	Approach	Main Sources	Purpose
SQ1-SQ6	- Literature - Secondary sources (e.g., IT and consulting studies)	Focacci et al. (2013) NTT DATA (2022)	Descriptive sample, helps to identify company size, which relates to H2
SQ7-SQ8	- Literature - Secondary sources (e.g., IT and consulting studies)	Kaspersky (2019) Deloitte (2019)	Descriptive sample, aids to clarify IT budgets per company size, which relates to H2

Sub-questions	Approach	Main Sources	Purpose
SQ9-10	- Secondary sources (e.g., analyst studies, Section 3.1)	IDG Research Services (2020 / 2021) Berghaus et al. (2015) Bloching et al. (2015) Weber et al. (2015)	Descriptive sample, to understand current situation
SQ11	- Literature - Secondary sources (e.g., IT and consulting studies)	Zuehlke and Roevekamp (2004) NTT DATA (2022)	Utilization to address RQ3
SQ12	- Literature - Secondary sources (e.g., IT and consulting studies)	Focacci et al. (2013) NTT DATA (2022)	Utilization to solve RQ4
SQ13	- Literature - Secondary sources (e.g., IT and consulting studies)	Zuehlke and Roevekamp (2004) IDG Research Services (2020 / 2021)	Helps to answer H4
SQ14	- Literature - Secondary sources (e.g., IT and consulting studies)	Focacci et al. (2013); IDG Research Services (2020 / 2021)	Ranking to answer H3 and address RQ4
SQ15	- Secondary sources (e.g., IT and consulting studies)	IDG Research Services (2020 / 2021) NTT DATA (2022) Gartner (2020)	Ranking to answer H3 and H4, address RQ3
SQ16	- Secondary sources (studies, Section 3.1)	Berghaus et al. (2015) Bloching et al. (2015) Weber et al. (2015)	Descriptive sample, understand the importance of Digitalization for the company
SQ17-18	- Literature - Secondary sources (e.g. IT studies)	Oswald and Krcmar (2018) Panetta (2018)	Helps to tackle H1

Sub-questions	Approach	Main Sources	Purpose
SQ19	- Literature - Secondary sources (e.g., IT and analyst studies)	Levy et al. (2022) NTT Data (2022) Gartner (2020)	Facilitates the exploration of H3 and H5
SQ20	- Secondary sources (e.g., studies, Section 3.1)	Berghaus et al. (2015) Bloching et al. (2015) Weber et al. (2015) Deloitte (2019)	Utilization to solve RQ4

Source: Own depiction

3.3.3 Characteristics of the Sample and Pre-test

For the standardized questionnaire a sample group was selected (Mayer, 2013, p. 59 f.). In the academic field of social science, the most used type of the sample is the "convenience sample", which was also used for this standardized questionnaire (Döring and Bortz, 2016, p. 305). The aim is to reach experienced C-Level and IT Managers, who are working for companies located in the German-speaking market. To get a comparison between SMBs and large enterprise, both categories are included in the target audience. For the identification of a company's size e.g., the number of employees can be used. The participants had to meet the following criteria:

- Company located in Germany, Austria, or Switzerland,
- Job title C-Level or IT Manager,
- First-line management or higher.

The selective approach ensures a high quality of evaluation data. Participants, who did not meet all the criteria were not considered in the evaluation. For the survey the market focus is Germany, which also demands the business location in Germany.

Before the questionnaire was send out to the target audience, the author did a pre-test with five IT executives in Germany to ensure that the questionnaire has a high quality. This selection was made because of the expert level of the executives in regards to digitalization and IT providers. It was helpful to identify and problematic, overly complex, and incomprehensible formulations and to further

improve the questionnaire. This then ensures the completeness and comparability of the results (Mayer, 2013, p. 45 f.). The feedback of the IT Executives was used, and the questionnaire was re-worked.

3.3.4 Data Evaluation

Overall, the final survey included 20 questions with mostly pre-defined response options. The items were taken directly from the revised template and coded - as mentioned in Section 3.3.2 - with a 5-point Likert scale from 1 "strongly disagree" to 5 "strongly agree". The recommendations of Döring and Bortz (2016, p. 415) are to use an online survey tool with easy usability, including a bar which demonstrates the progress and the ability to finish the questionnaire in ten to 15 minutes. Döring and Bortz (2016, p. 412) stated that the response curve is high if the survey is available on a mobile device or online. To send out the survey via post and get the responses the same way needs the most time. To be in line with the recommendations, the survey was created with the online tool "SurveyMonkey" and the estimated duration of finishing the questionnaire is approximately ten to 15 minutes. The duration is enough to receive the necessary information for the study and attractive for the participants to get a high number of responses.

To analyze the results if the survey explorative, descriptive, and inferential statistics is used. Exploratory data analysis (EDA) helps to find structures, trends, or patterns in quantitative data. Individual variables, distributions, and correlations are considered in detail to extract more information from the data. Furthermore, the descriptive statistics is used to identify characteristic values and distributions and to present them clearly in tables and graphs. Uni-, bi- or multivariate methods can be used for the analyses of the available data. First, in the explorative approach the most interesting variables are screened, and frequency distributions are illustrated. In addition, an optical distribution test can be performed. This is called a "box plot". The median with the existing scatter and outliers of the data are displayed. Thus, conclusions can be drawn more easily (Döring and Bortz, 2016, pp. 621-623).

For analyzing the study results different tests are used, which are related to inferential statistics. With the help of these tests there can be made statements about the population based on the sample. Each test is depended on the used scale, e.g.,

for interval scale the t-test is recommended or for ordinal scale a Mann-Whitney U-test can be done. Short descriptions of the relevant tests for this study are stated.

t-tests for dependent samples checks whether the mean difference found differs significantly between the dependent samples (shown Formula 1). A t-test can be employed to assess if a single group deviates from a known value (one-sample t-test), if there is a distinction between two groups (independent two-sample t-test) or if there exists a significant disparity in pairwise measurements. In addition, the calculation of a test variable from the data is needed and must be compared to a theoretical value from a t-distribution. Depending on the result, the null hypothesis can either be rejected or not (Sedlmeier and Renkewitz, 2018, p. 414).

Formula 1: t-test

$$t_{\hat{\beta}} = \frac{\hat{\beta} - \beta_0}{\mathrm{SE}(\hat{\beta})}$$

Additionally, the Mann-Whitney U-test for independent samples examines whether the central tendencies of two separate samples display disparities. The Mann-Whitney U-test is used when the requirements for a t-test for independent samples are not met (Sedlmeier and Renkewitz, 2018, p. 589 f.).

Furthermore, the K-S-test (Kolmogorow-Smirnow-test) is used to compare the observed cumulative distribution function for a variable with a specified theoretical distribution, which may be a normal distribution, a uniform distribution, a poison distribution, and exponential distribution (shown in Formula 2). The Kolmogorov-Smirnov Z is determined by the maximum difference (in absolute values) between observed and theoretical cumulative distribution functions. This test is used to test whether the observation is likely to be from the specified distribution (IBM, 2022).

Finally, to confirm or reject a hypothesis the significance level is measured with the p-value. The term significant indicates the result is statistically important. The levels are typical for statistical analysis with the p-value and shown in Table 18 (Sedlmeier and Renkewitz, 2018, pp. 398-404).

Formula 2: K-S-test

$$D=\max 1\leq i\leq N(F(Yi)-i-1N,iN-F(Yi))$$

Table 18: Level of p-value

Description	p-value
Significant	≤ 0.05
Very significant	≤ 0.01
Highly significant	≤ 0.001

Source: Own depiction according to (Döring and Bortz, 2016, p. 664)

4 ANALYSIS OF EMPIRICAL STUDY

Chapter 4 includes the quantitative research results of the dissertation and presents the findings of the study using statistical analysis. The theoretical statistical analysis is described in Section 3.3.4. It aims to provide a clear and concise summary of the data collected and analyzed and to answer the research questions or hypotheses. This section is crucial in establishing the validity and reliability of the research and it provides a detailed explanation of the statistical methods used to analyze the data. The results presented in this section are usually in the form of tables or charts, which help to visualize the data and make it easier for readers to understand. This section is an essential component of the own research study and it contributes to the overall credibility of the research. This empirical analysis is underpinning the dynamics of the IT provider landscape's transformation, facilitating a comprehensive understanding of how digitalization has reshaped businesses' strategies, collaborations, and networks.

4.1 Survey Participants

The survey (Appendix B) was active from January 25th till February 18th, 2023. During this time subjects could participate in the survey. The survey was accessed via the link https://www.surveymonkey.de/r/Q2YW9B2. For the distribution of the survey three different approaches were used. First, mails with a cover letter in German and English were sent out to 52 selected contacts. With the help of the network of IBM Germany the selection of individual contacts was possible. Additionally, the second approach was the professional social network LinkedIn. There is a filtering option on job titles and location. With the filtering option individual messages to 107 C-Level and IT Managers were send out. Finally, the last approach was BITKOM e.V., which is Germany’s digital association. There was the opportunity to post the cover letter and survey link in the working group of artificial intelligence with more than 200 members. This approach was selected to have a higher willingness to participate if an established association is supporting the survey. Overall, only one individual of each selected company has been

contacted. In total the survey was sent to 359 individuals. On February 18th 63 participants finished the questionnaire. So, the survey was closed because the number of at least 50 valid participants was reached.

Overall, the survey was sent to 359 individuals and after the time period 63 individuals responded to the questionnaire. This equals a response rate of 17.54 %. The aim was to achieve at least a response rate of 10 %. Döring and Bortz (2016, p. 412) stated a response rate between 5-40 % is realistic, depending on several factors, which are named in Section 3.3.4. Often C-level contacts and IT Managers are busy and a time invest of ten minutes shows, that the topic is relevant to them.

The responses are from 63 participants, which equals 63 different organizations, which is shown in Table 19. Zero organizations in the survey research had multiple respondents (two or more). As mentioned, the target audience were First-line manager or higher. However, since only the assessments of persons in higher positions were asked for, such cases that did not fit were filtered out. The final data set contains 50 respondents in total.

Table 19: Overview Survey Participants

Preliminary number (#) of participants	**63**
Participant did not finish the questionnaire	**-**
Participant(s) of same company	-
Participant has not a management role	**13**
Adjusted total number of participants	**50**

Source: Own depiction

All participants were employed in different companies and in the following positions IT Management (36 %) as well as CEO (24 %), CIO (16 %), and CTO (12 %). Each 4 % were in non- or other IT positions. In total, 52 % of the individuals were in C-level positions (top level management), 34 % participants in Executive management (middle level management) and 14 % participants in first-level management (team leading).

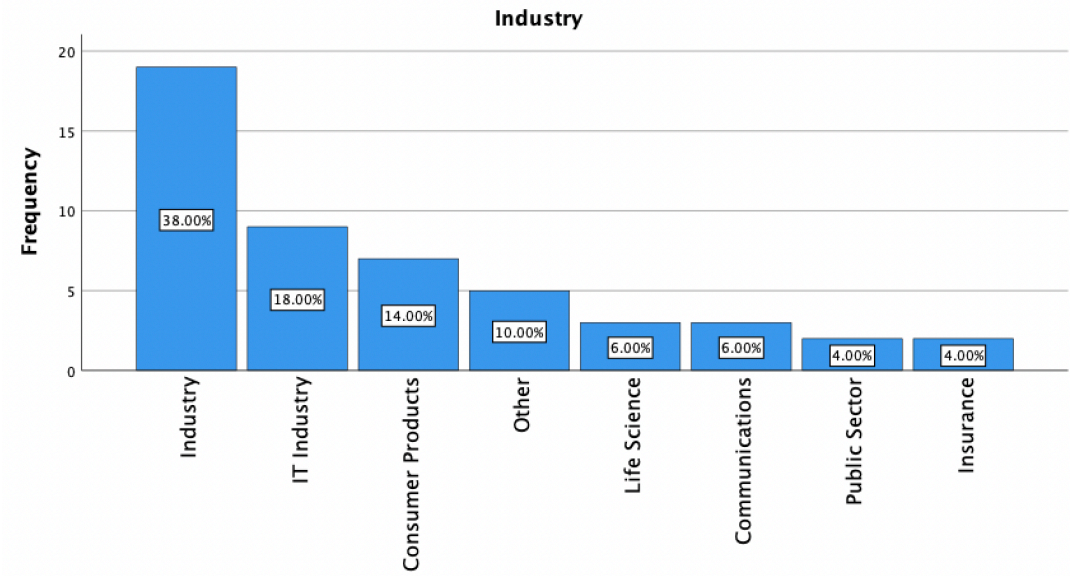
Within the survey research, seven industries were identified, which are illustrated in Figure 34. All seven industries are considered in the survey.

Additionally, the respondents had the chance to choose "Other" and specify their industry, if it was not reflected in the enumeration, which was used by 10 % of the participants.

The following industry split was the result of the survey:

- Industry sector 38 %, e.g., Manufacturing,
- IT industry 18 %,
- Consumer products 14 %,
- Life science 6 %,
- Public sector 4 %,
- Insurance 4 %.

Figure 34: Survey Participants Industry Selection



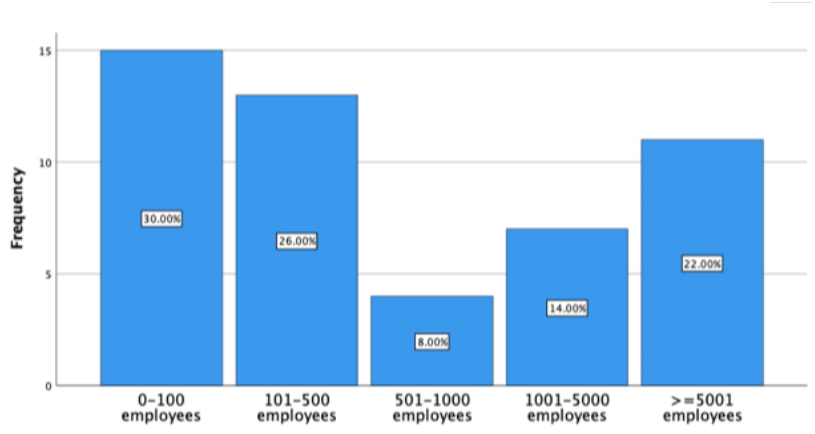
Source: Own depiction

The annual turnover of the companies was also surveyed to estimate the size of the company. Most of the participants (54 %) mentioned that their companies generate up to one billion USD annual turnover. Up to ten billion USD annual turnover is generated by 28 % of the companies. More than ten billion USD annually is generated by 18 % of the companies.

In this context, the number of employees was also interesting. 30 % of the companies employed up to 100 employees and 26 % between 101 and 500 employees. Only 8 % represent the companies, which have employed up to 1,000 employees and 14 % up to 5,000 employees. On the other hand, 22 % companies had more than 5,001 employees. The overview is illustrated in Figure 35. This variable will be split in two divisions and used as indicator for the size of a company to evaluate differences in relevant as well as important factors. Overall, 56 % is categorized as SMB and 44 % of the participants are representing large companies. Following the SMB definition of IFM the participants were split in two groups to find similarities or differences:

- SMB: ≤ 500 employees
- Large companies: > 500 employees

Figure 35: Respondents Number of Employees



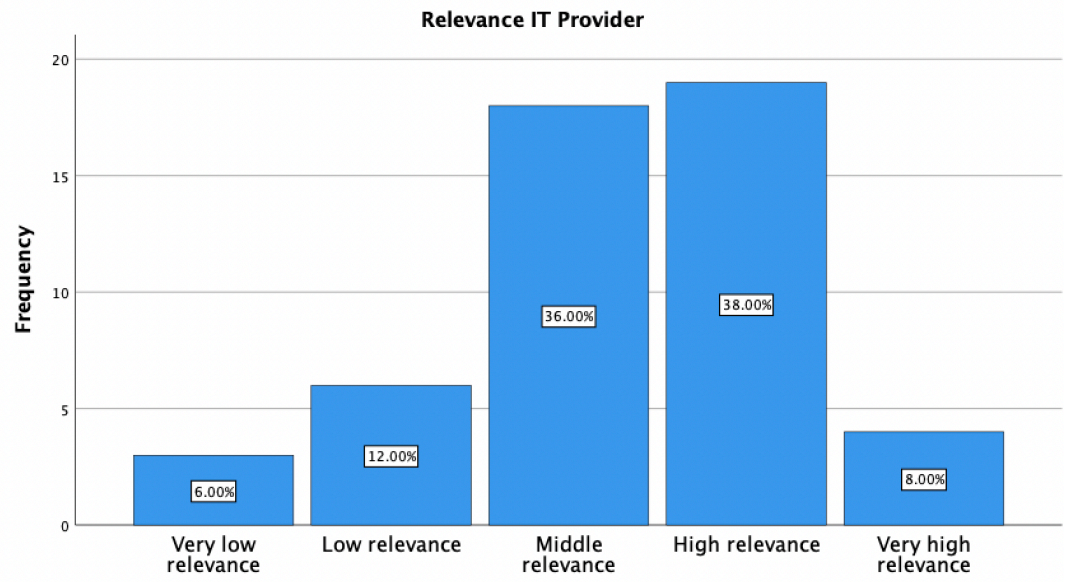
Source: Own depiction

4.2 Evaluation of IT Provider Adoption and Technology Trends (H1)

Focacci et al. (2013, pp. 8-12) stated that companies are working with MSPs to understand the complexity of IT, have predictable costs and rely on the latest technology. In the first part of the questionnaire the question was raised to rate the relevance of the IT provider for their company. Overall, 46 % responded that the IT provider has a high relevance or very high relevance for them. Middle relevance

was reflected with 36 %. For only 18 % the IT provider has a low or very low relevance. The overview is illustrated in Figure 36. Additionally, participants indicated that the topic digitalization was very important for their company. The rating was from 1 (not relevant at all) to 5 (very relevant). The median for this variable was 4.50 and standard deviation was shown with 0.614.

Figure 36: Relevance IT Provider



Source: Own depiction

As this dissertation focuses on the MSPs, it was interesting for the context to capture the available IT budget in the company. The majority of companies (36 %) have a budget of less than half a million USD, but 32 % of the companies' report having more than five billion USD available for IT. A very high difference between the companies can be identified. Furthermore, the participants were asked to estimate the development of their IT budget in 2024 compared to the 2023 IT budget. 46 % of the respondents estimate an increase between 1 % and 20 %, but 32 % estimate no change in their IT budget or a constant budget. Only 6 % estimated a decrease of the development in their IT budget for 2024.

A cross-table-matrix indicates that this difference can be attributed to the size of the companies. Larger companies with more than 1,001 employees (total n = 15)

also tend to have a very high IT budget (more than five billion USD), while smaller companies with up to 500 employees (total n = 18) also tend to have a smaller IT budget (up to half a million USD).

In this context, it was also evaluated whether the companies had outsourced IT services or not. 56 % of participating companies have predominantly outsourced certain IT services. In each case, 16 % companies either outsourced most IT services or none at all. Furthermore, 6 % of the companies each are either not at all interested in outsourcing these services or have already completely outsourced this area. Based on a cross-table-matrix it can be observed that this time no clear line can be drawn between the behavior of small and large companies. It can be assumed that in this case it depends specifically on the individual structure and organization whether a decision is made for or against outsourcing IT services.

H1: The top two future technologies are: Artificial Intelligence and Cloud Computing.

In order to examine hypothesis 1, the mean values of the future technology questions are compared with each other. Table 20 provides an overview of the results. The participants had to rank the importance of the technologies in a school system from 1 (very important) to 6 (not important at all). The lower the rank, the more important the technology. The following descriptive data indicates that artificial intelligence achieved the highest mean value with M = 1.84 (SD = 1.037). In second place, cloud computing seems to be interesting for the companies with M = 2.90 (SD = 1.644). The third most interesting future technology is the big data analytics with M = 3.12 (SD = 1.233). IoT, quantum computing, and blockchain are one of the last important future technologies. Therefore, the hypothesis 1 can be supported.

To check whether the two most interesting future technologies show differences depending on the size of the companies (large companies and SMBs), cross-table matrix were drawn up. These already demonstrate that no difference is apparent in any case. Both small and large companies are equally interested in these two technologies. A correlation with the two most interesting future

technologies and the dichotomized variable of company size also showed no significant correlation in any case. This is reflected in the Table 21.

Table 20: Means Future Technologies for Hypothesis 1

Technology	N	M	SD	Min	Max
Cloud computing	50	**2.90**	1.644	1	6
Artificial intelligence	50	**1.84**	1.037	1	5
Big data analytics	50	3.12	1.223	1	6
Internet of things (IoT)	50	3.96	1.370	1	6
Blockchain	50	4.82	1.240	1	6
Quantum computing	50	4.36	1.758	1	6

Source: Own depiction

Table 21: Correlation Future Technologies and Company size

Company size		Cloud computing	Artificial intelligence
	Pearson-Correlation	-.161	-.023
	Sig.	.265	.874
	N	50	50

Source: Own depiction

4.3 Evaluation of MSPs' Role and Impact

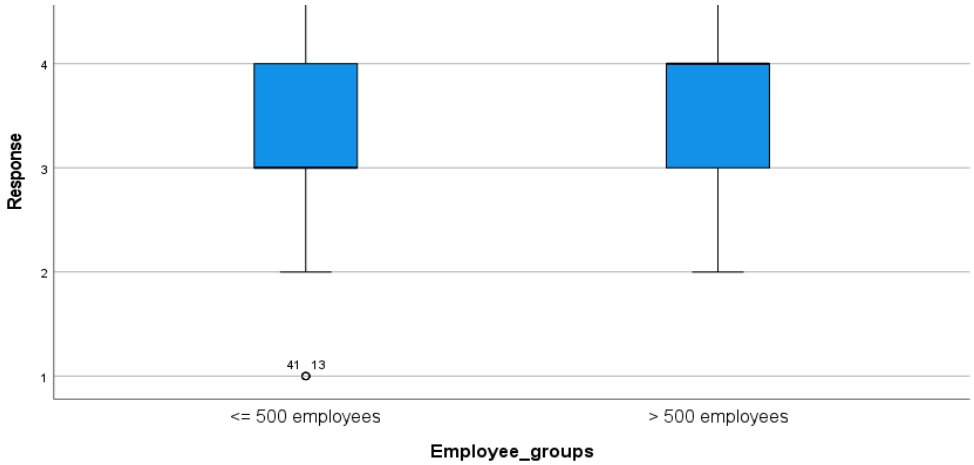
4.3.1 Impact of Company size on Willingness to engage with MSPs (H2-H3)

H2: The company size is not influencing the willingness to work with MSPs.

To be able to test hypothesis 2, the variable "relevance of MSPs" is used. The mean value of the variable is M = 3.30, SD = .995, which indicates a slightly above-average relevance. The participants were asked to rank the relevance of MSPs from 1 (low relevance) to 5 (high relevance). A cross-table matrix was used to analyze the extent to which there are differences between the companies. A tendency toward a higher rating by large companies can be determined. A correlation was then carried out, but it was not significant (r = .180, p = .211). This shows that there is no correlation with company size and the assessment of the relevance of MSPs. The study result is matching with the literature review. Additionally, according to Focacci et al. (2013) and Smith and Kumar (2004, pp. 984-989) it was mentioned that MSPs are more likely to work with SMBs. However, the company size does not influence the willingness to work with MSPs. Additionally, a summary was shown in Table 12.

In the next step, an exploratory data analysis (Table 22) was conducted to find out whether there is a difference between the evaluation of small and large companies or not. For this, the relevance variable was used as the dependent variable (DV) and company size as the factor. The K-S-test for normal distribution was again significant, indicating that the data are not normally distributed. A slight left skewness can again be observed in both groups, but the graphs represent a straight ascending line. The boxplot in Figure 37 shows two outliers for small companies (41, 13), no outliers can be found for large companies. Based on the mean values, it can already be said that small companies rate the relevance of MSPs lower than large companies. Since the data do not meet the requirements for a t- test, a Mann-Whitney U-test is carried out.

Figure 37: Boxplot Graph for Hypothesis 2



Source: Own depiction

Table 22: Exploratory Data Analysis for Hypothesis 2

Company size	N	M	SD	Min	Max	Skewness	Curtosis
SMB	28	3.14	1.113	1	5	-.301	-.110
Large	22	3.50	.802	2	5	-.610	-.202

Source: Own depiction

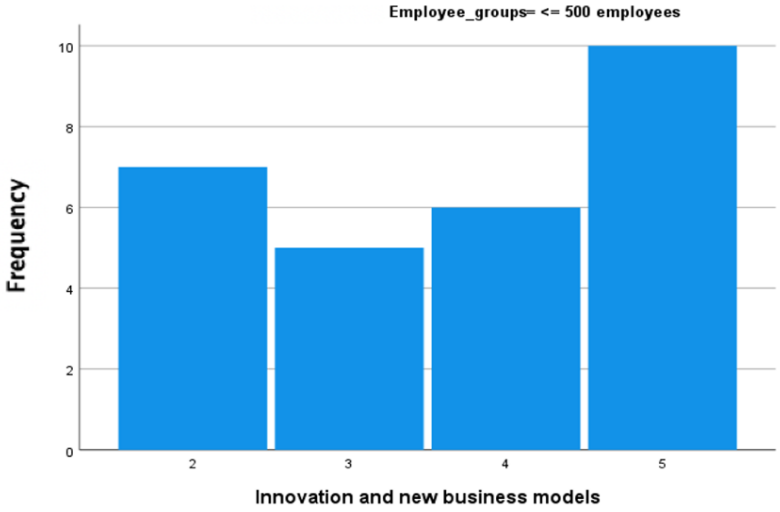
Since the assumptions for a t-test are not given, a Mann-Whitney U-test is carried out again to test whether the difference between the two groups is significant. However, the test indicates no significant difference in the interest in relevance of MSPs of small and large companies: U = 246.000, Z = -1.280, p = .201. This result gives an indication that relevance of MSPs is less dependent on the size of the company. The hypothesis can be supported.

H3: SMB are more focused on innovation and security than larger companies.

To test hypothesis 3, an exploratory data analysis is first conducted to proof the assumptions for a t-test. For this purpose, the variable of innovation is used as the DV, the size of the company as a factor. For this purpose, the variable was dichotomized by coding < = 500 employees with "0" and > 500 employees with "1". The results of the exploratory data analysis can be found in Table 23. The participants were asked to rate on a Likert scale the relevance of services of a MSP from 1 (low) to 5 (very high).

The K-S-test for normal distribution was significant for the group up to 500 employees (SMBs), which means that the data are not normally distributed. For this group, a slightly left skewed distribution can be seen on the histogram (shown in Figure 38). The graph indicates a straight ascending line. Additionally, a boxplot was created, however no outliers for this group can be identified. For the group of companies with 500 or more employees, the K-S-test was not significant, which suggests a normal distribution. The means indicate that companies with up to 500 employees are more interested in innovation and new BMs than larger companies. Based on these findings, a t-test is not appropriate to measure differences, as the assumptions are not given. Therefore, a Mann-Whitney U-Test is conducted.

Figure 38: Histogram SMBs on Innovation



Source: Own depiction

Table 23: Exploratory Data Analysis for Hypothesis 3 on Innovation

Company size	N	M	SD	Min	Max	Skewness	Curtosis
SMB	28	3.68	1.219	2	5	-.251	-1.536
Large	22	3.32	1.211	1	5	-.327	-.532

Source: Own depiction

The U-test was conducted to test the differences between large and small companies in terms of their interest in innovation. Although the mean values indicate a difference, the test was not significant. Accordingly, there is no significant difference between the two groups, U = 259.000, Z = -.986, p = .324. Interest in innovation is, therefore, not necessarily related to the size of the company. Consequently, the hypothesis concerning innovation can be rejected.

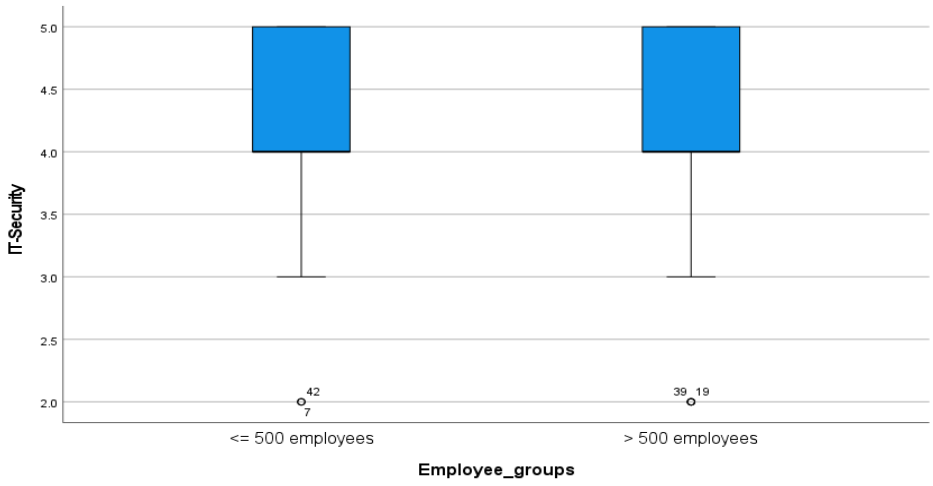
Furthermore, the interest in IT security was tested. It is assumed that SMBs have a higher interest in security than large companies (>500 employees). As a starting point, an exploratory data analysis was conducted to test the assumptions. For the exploratory data analysis, the variable on IT security was used as the DV and the size of the company (dichotomized) as a factor. The summary of the results can be observed in the Table 24. Already the means indicate that SMBs have a higher interest in IT security than large companies. In both cases, the K-S-test for normal distribution was significant, indicating that the data of the two groups are not normally distributed. However, ascending straight lines can be seen on the graphs in both cases. Both groups show a slight skew to the left. In addition, the boxplot (Figure 39) shows two outliers each for small (42, 7) and for large companies (39, 19).

Table 24: Exploratory Data Analysis for Hypothesis 3 on Security

Company size	N	M	SD	Min	Max	Skewness	Curtosis
SMB	28	4.25	.887	2	5	-1.221	1.139
Large	22	4.09	1.065	2	5	-.976	-.179

Source: Own depiction

Figure 39: Boxplot Graph for Hypothesis 3



Source: Own depiction

Since the assumptions for a t-test are not given, a Mann-Whitney U-test is carried out again to test whether the difference between the two groups is significant. However, the test indicates no significant difference in the interest in IT security of small and large companies: U = 290.500, Z = -.370, p = .711. This result gives an indication that interest in IT security is less dependent on the size of the company.

To summarize the result for hypothesis 3: Small and medium-sized businesses are in fact more interested in innovation and security, but the difference to large company is not significant. Overall, hypothesis 3 is rejected.

4.3.2 Determining Areas on working with MSPs (H4-H5)

H4: The two largest inhibitors to work with MSPs are the insufficient maturity of affected business processes and the fear of losing know-how.

In order to test hypothesis 4, the mean value of the variable "Inhibitor" is first collected using descriptive statistics. The participants ranked the relevance of the inhibitors from 1 (very low) to 5 (very high). For "Insufficient maturity of affected

business processes" a mean value of M = 3.40, SD = .756 can be determined. This is the highest value when all factors are taken into account. Additionally, to find out, what is the second largest inhibitor the "loss of know-how" was identified with M = 3.29, SD = .935 and to create the top three, the third strongest inhibitor is the increased coordination effort with M = 3.24, SD = .797. The results can be found in Table 25.

Table 25: Means for Inhibitors for using MSPs

Factors	N	M	SD	Min	Max
Dependence on the service provider	50	3.20	.857	1	5
Loss of know-how	49	**3.29**	.935	1	5
Resistance in the corporate culture	49	2.88	1.033	1	5
Legal aspects	50	2.96	1.160	1	5
Increased coordination effort	50	**3.24**	.797	2	5
Lack of experience	50	3.06	.913	1	5
Insufficient maturity of affected business processes	50	**3.40**	.756	2	5
Insufficient financial benefits	50	3.12	.918	1	5
Outsourcing is not a strategy	50	2.54	1.129	1	5
Not enough resources available	49	3.08	.932	1	5

Source: Own depiction

In the next step, the three strongest inhibitors are examined more closely by calculating correlations with company size. However, no model shows significant results, as can be seen in Table 26 below. This indicates that company size is not relevant in the assessment of inhibitors.

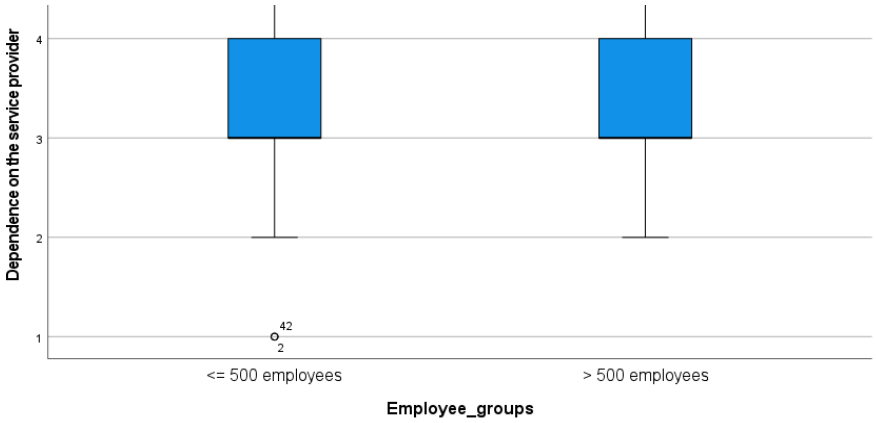
Table 26: Correlation between strongest Inhibitors and Company size

Company size		Increased coordination effort	Loss of know-how	Insufficient maturity of affected business processes
	Pearson-Correlation	.037	.165	.172
	Sig.	.800	.258	.232
	N	50	49	50

Source: Own depiction

However, the effect of the inhibitors on an MSP will be examined with an exploratory data analysis. For this purpose, the "inhibitor" variable is used as the DV, the size of the company represents the factor. Once again, a slight left skewness can be found for SMBs and a right skewness for larger companies. The K-S test signifies significance, thereby negating the assumption of a normal distribution of the data. The graphs show a straight ascending line. The boxplot (Figure 40) shows two outliers for smaller companies (42, 2), but not for larger companies. Based on the mean values, it can already be seen that smaller companies recognize a lower dependence on MSPs than larger companies, as shown in Table 27.

Figure 40: Boxplot Graph for Hypothesis 4



Source: Own depiction

Table 27: Exploratory Data Analysis for Hypothesis 4

Company size	N	M	SD	Min	Max	Skewness	Curtosis
SMB	28	3.14	.932	1	5	-.598	.571
Large	22	3.27	.767	2	5	.167	-.044

Source: Own depiction

Since the assumptions for a t-test are not given, a Mann-Whitney U-test is conducted to examine whether the difference between the two groups is significant or not. However, no significant difference can be found between the two groups: U = 294.000, Z = -.296, p = .767. Therefore, the size of the company does not matter when assessing the inhibitors of working with MSPs and the hypothesis 4 can be supported.

H5: MSPs do need to focus on consultative selling to be successful in the next five years.

The hypothesis 5 is tested using the variables "Managed services without included consulting services are no longer of interest to companies today" (M = 3.30, SD = 1.093) and "Managed services without included consulting services will no longer be of interest to companies in the next five years" (M = 3.42, SD = 1.230). The participants were asked to rank the importance of consultive selling from 1 (strongly agree) to 6 (strongly disagree). The participants are sure that consulting services are of high interest for companies at the moment and in the next five years.

To take a closer look at the circumstances, further calculations are conducted. A correlation with company size initially showed no significant results, as can be seen in the following table. A cross-tabulation (shown in Table 28) also showed no preference for the different-sized companies. However, the hypothesis 5 is rejected, because consultative selling is important to all companies, but there is no significance for the future result.

Table 28: Correlation Consulting Services & Company size for Hypothesis 5

Company size		"Managed services without included consulting services are no longer be of interest to companies today."	"Managed services without included consulting services will no longer be of interest to companies in the next five years."
	Pearson-Correlation	-.022	-.173
	Sig.	.878	.229
	N	50	50

Source: Own depiction

4.3.3 Exploring critical Factors and major Fields for MSPs (RQ3-RQ4)

Additional analysis of the survey results can be made beyond the testing of the hypothesis. The participating companies were also asked about their reasons and goals for outsourcing IT services. Table 29 shows the results of the descriptive statistics. The participants rated the goals from 1 (very important) to 5 (not important at all). The means in the table below indicate that cost savings are the most important goal for the participants (M = 2.44, SD = 1.473), as well as modernizing the IT in the company (M = 2.60, SD = 1.195) and reducing the risks (M = 2.44, SD = 1.473).

Table 29: Means Reasons for Outsourcing Goals

Factors	N	M	SD	Min	Max
Cost savings	50	**2.44**	1.473	1	5
Risk reduction	50	**2.68**	1.285	1	5
IT modernization	50	**2.60**	1.195	1	5
Fulfill market requirements	50	3.56	1.296	1	5
Find industry experts	50	3.72	1.356	1	5

Source: Own depiction

Furthermore, the participants ranked the reasons for the decision to work with an MSP from 1 (very low) to 5 (very high). As a result, the main advantages for working with MSPs are high availability (M = 3.84, SD = .912), internal capacity that is freed up (M = 3.78, SD = .996) and transparent costs (M = 3.76, SD = 1.098) as shown in Table 30. The lowest agreement was for the non-satisfaction with the company´s own IT department.

Table 30: Means Reasons for using MSPs

Factors	N	M	SD	Min	Max
Transparent costs	50	**3.76**	1.098	1	5
Risk sharing	50	3.68	.957	1	5
Cost reduction	50	3.58	.950	1	5
Shorter time-to-market	50	3.52	1.074	1	5
Innovation and new business models	50	3.52	1.216	1	5
Better support	50	3.72	1.070	1	5
Free capacity (internally)	50	**3.78**	.996	1	5
Not satisfied with own IT department	50	2.20	1.050	1	5
High availability	50	**3.84**	.912	1	5
External industry expertise	50	3.34	1.222	1	5

Source: Own depiction

The next step is to examine whether there are differences between large companies and SMBs in this respect. For this purpose, an exploratory data analysis will be conducted. The three strongest reasons for outsourcing are used as DV, while the size of the company is again considered as a factor. Large companies show a higher mean value in all three factors than small companies. A slight left skewness can also be detected in all three models. Also, all models were significant in the K-S-test, indicating that the data is not normally distributed in any of the models. For all three variables, the plots show a straight upward line. In addition to that, boxplot was created for Transparent Costs, Free Capacity no or only one

outlier can be identified. The tables below (Table 31, 32, and 33) present the exploratory data analysis for all three factors.

Table 31: Exploratory Data Analysis for Transparency of Costs

Company size	N	M	SD	Min	Max	Skewness	Curtosis
SMB	28	3.64	1.224	1	5	-.684	-.316
Large	22	3.91	.921	2	5	-.209	-1.017

Source: Own depiction

Table 32: Exploratory Data Analysis for free Capacity

Company size	N	M	SD	Min	Max	Skewness	Curtosis
SMB	28	3.75	.967	1	5	-.777	1.069
Large	22	3.82	1.053	2	5	-.142	-1.362

Source: Own depiction

Table 33: Exploratory Data Analysis for high Availability

Company size	N	M	SD	Min	Max	Skewness	Curtosis
SMB	28	3.68	1.056	1	5	-.713	.170
Large	22	4.05	.653	3	5	-.042	-.368

Source: Own depiction

The mean values partly show high differences between the small and large companies, so it is to be tested whether the differences between the two groups are significant. Since the prerequisites for a t-test are not given, a Mann-Whitney U-test is calculated for all three models. It turns out that none of the models show significant differences between the small and large companies. For the model on transparent costs, U = 280,000, Z = -.570, p = .569 was collected. For the differences on spare capacity, U = 301,000, Z = -.143, p = .886 was found. For the third model on high availability, U = 255,000, Z = -1.1119, p = .263 was calculated. Accordingly,

differences between small and large companies can be found, but these are not significant.

Furthermore, the relevance of the IT services used by the surveyed companies were collected in the survey. The participants rated the relevance from 1 (low) to 5 (very high). With the help of descriptive statistics, it can be recorded that the companies surveyed mainly use IT security (M = 4.18, SD = .962), server management (M = 3.60, SD = 1.050), and IT network (M = 3.64, SD = 1.120). Project Management received the least agreement with (M = 2.62, SD = .987). The summary is illustrated in Table 34.

Table 34: Descriptive Statistics used IT Services

Factors	N	M	SD	Min	Max
Standard business software	50	3.36	1.120	1	5
Mailserver	50	3.46	1.487	1	5
Application Management	49	3.31	.895	1	5
Helpdesk	50	3.18	1.224	1	5
Data archiving	50	3.24	1.170	1	5
IT networks	50	**3.64**	1.120	1	5
Server Management	50	**3.60**	1.050	1	5
IT security	50	**4.18**	.962	2	5
Project Management	50	2.62	.987	1	5
Virtualization	50	3.18	1.044	1	5

Source: Own depiction

The participants also rated the relevance of critical factors for selecting an IT sourcing provider. The scale was from 1 (very low) to 5 (very high). As presented in Table 35 the descriptive statistics indicate the use of the latest technologies as the most critical factor for the selection of an MSP (M = 4.04, SD = .807). The second important factor is the industry knowledge and expertise of an IT Service Provider

(M = 3.96, SD = .989). The third rank was the financial stability of the MSP (M = 3.82, SD = .919).

Table 35: Descriptive Statistics critical Factors in the Selection of MSP

Factors	N	M	SD	Min	Max
Financial stability	50	**3.82**	.919	2	5
Industry knowledge / expertise	50	**3.96**	.989	1	5
Individual service offer	50	3.68	.844	1	5
Use of the latest technologies	50	**4.04**	.807	1	5
Selection of reference customers	50	3.24	.822	1	5
Certifications (e.g., ISO)	50	3.62	1.159	1	5
Language	50	3.78	.975	1	5
Local presence / site	50	3.36	1.102	1	5
Standardized products	50	3.36	.827	1	5
Existing business relationship	50	3.06	1.114	1	5

Source: Own depiction

In addition to that, it is also relevant to find out, if one critical success factor for IT providers is to be the innovation driver for companies. Therefore, it was tested with the variables "IT providers are driving innovation for my business today" (M = 2.72, SD = 1.07) and "IT providers are driving innovation for my business in the next five years" (M = 3.40, SD = 1.178). The participants were asked to rank the innovation drive of MSPs from 1 (strongly agree) to 6 (strongly disagree). The means already indicate that the participants agreed more to the fact that providers drive innovation for their business today, but not for the future. The mean for the future innovation drive was over average. Using a cross-tabulation table, a tendency can be identified in this case according to which smaller companies tend to attribute less importance to MSPs for today, while large companies tend to express themselves neutrally to positively. The question about the importance of MSPs for the future is answered very positively by both small and large companies. However, the difference is so small that its correlation of the

two variables with company size does not indicate a significant result as Table 36 demonstrates.

Table 36: Correlation IT Provider, Innovation driver and Company size

Company size		"IT provider are driving innovation for my business today."	"IT provider are driving innovation for my business in the next five years."
	Pearson-Correlation	-.070	-.062
	Sig.	.629	.668
	N	50	50

Source: Own depiction

To analyze whether the innovation drive of MSPs is ranked differently by Industry, the variable was coded dichotomy in 1 (manufacturing industry) and 0 (else). First, an exploratory data analysis is conducted as presented in Table 37.The innovation rank for today was set as DV, the industry was set as the factor.

The K-S-test was significant for other industries, but not significant for manufacturing industry. This means, that the data for manufacturing industries were normally distributed, for other industries they were not. The means are very similar. For both industry sectors a slight right skewness is indicated, but the data are arranged in a reasonable straight line in the diagram. No outliers were found in the boxplots for both industry sectors.

Table 37: Exploratory Analysis Industry Sector & Innovation Driver Today

Sector	N	M	SD	Min	Max	Skewness	Curtosis
Else	31	2.65	1.112	1	5	.152	-.853
Industry	19	2.84	1.015	1	5	.348	-.356

Source: Own depiction

As the assumptions for a t-test is not given, a Mann-Whitney U-Test was conducted. The U-test was conducted to test the differences between the industry sectors in terms of the innovation drive of MSPs. Although the mean values indicate a difference, the test was not significant. Accordingly, there is no

significant difference between the two groups, U = 266.000, Z = -.592, p = .554. Innovation drive for today is therefore not necessarily related to the industry sector. To test the ranking for future innovation drive, an exploratory data analysis was conducted for the second innovation variable as DV and the dichotomy industry sector as factor. The results are presented in Table 38. The K-S-test was significant for both industry sectors, meaning that the data are not normally distributed. As seen in the table the means are very similar.

Table 38: Exploratory Analysis Industry Sector & Future Innovation driver

Sector	N	M	SD	Min	Max	Skewness	Curtosis
Else	31	2.65	1.112	1	5	.152	-.853
Industry	19	2.84	1.015	1	5	.348	-.356

Source: Own depiction

As the assumptions for a t-test is not given, a Mann-Whitney U-Test was conducted. The U-test was conducted to test the differences between the industry sectors in terms of the future innovation drive of MSPs. Although the mean values indicate a difference, the test was not significant. Accordingly, there is no significant difference between the two groups, U = 260.500, Z = -.703, p = .482. The future innovation drive is therefore not necessarily related to the industry sector. Also, the participants were questioned to rank the importance of investing in new technologies in Germany. The ranking was from 1 (very low) to 5 (very high). All factors were ranked very high above average. But the advantages in competition that new technologies promising is the most relevant factor with a very high mean of M = 4.06, SD = .978, which is shown in Table 39.

Table 39: Descriptive Statistics investing in new Technologies

Factors	N	M	SD	Min	Max
Competitive advantage	50	**4.06**	.978	1	5
Cost savings	50	3.68	.891	2	5
Risk reduction	50	3.74	.944	2	5
Market requirements	49	3.67	.922	2	5

Source: Own depiction

5 DISCUSSION

Chapter 5 is the discussion part of the research, beginning with an analysis of the key findings. This section breaks down the primary data, showing patterns and trends that have emerged from the empirical research. A summary of the research results is presented, providing an overview of the primary outcomes and their significance. In addition, the next section describes the theoretical and managerial implications of the dissertation. This section underscores the research's relevance to academic scholars and industry practitioners, emphasizing the practical implications of the results, and suggesting potential spots for future exploration in the domain. Furthermore, a comprehensive synthesis, combining the various research threads to present a holistic picture of the future BM of MSPs is presented. While the dissertation contributes valuable insights, it is important to also recognize the limitations. The dissertation's focus on the German-speaking market and specific industries could have restricted the generalizability of findings to a broader context. Additionally, the research primarily addressed established organizations, potentially limiting its applicability to start-ups or entrepreneurial ventures. These limitations serve as springboards for future research endeavors, fostering a continued exploration of the intricate landscape of managed IT services and BMI.

5.1 Summary of Research Results

The following section presents an overview of the research findings and summarizes the results of the hypotheses tested. The study aimed to investigate the changing landscape of the MSP sector, innovation capability, and success in the digital era, focusing on the role of digital technologies. The hypotheses were formulated based on the literature review and research objectives, and the survey results were analyzed to validate or refute these hypotheses. The section provides a concise summary of the key findings and their implications. Table 40 summarizes the research results (H1–H5).

Table 40: Summary Research Results for Hypothesis 1-5

Hypotheses	Value	Comment
H1: The top two future technologies are: Artificial Intelligence and Cloud Computing.	M = 1.84 (AI) M = 2.90 (Cloud)	**Supported**
H2: The company size is not influencing the willingness to work with MSPs.	p = 0.201	**Supported**
H3: SMB are more focused on innovation and security than larger companies.	p = 0.324	**Rejected**
H4: The two largest inhibitors to work with MSPs are the insufficient maturity of affected business processes and the fear of losing know-how.	M = 3.40 p = 0.756 (Processes) M=3.29 p = 0.935 (Loss know-how)	**Supported**
H5: MSPs do need to focus on consultative selling to be successful in the next five years.	p = 0.229	**Rejected**

Source: Own depiction

In scientific research, hypotheses are proposed and tested to determine whether they are supported or rejected by the available evidence. In the context of MSPs, five hypotheses were proposed to examine different aspects of the MSP market and the factors influencing companies' decisions to work with them.

Based on the available literature, two out of six hypotheses were rejected. This outcome emphasizes the importance of objectively analyzing and interpreting research results, even when they do not align with expectations. The implications of the rejected hypotheses may include weaker or non-existent relationships between variables and require re-evaluation of research methodology or sample size in future studies. However, these rejections can also provide valuable insights into limitations and areas for further investigation or refinement of the research framework. It is crucial to critically analyze and interpret the findings to

understand the reasons behind hypothesis rejection and identify areas for future research. In conclusion, while rejecting hypotheses may be unexpected, it offers an opportunity for further exploration and refinement of the research topic, highlighting the importance of rigor and objectivity in research interpretation.

In recent years, companies' innovation capability and success have changed significantly, driven by global competition and digitalization (Caputo et al., 2021; Parker et al., 2016). They aim to gain a competitive advantage to create new value propositions emphasizing speed and innovation (Schmutte, 2020, pp. 35-66). The McKinsey Digital (2019) study's survey results supported the importance of technologies such as AI and cloud computing for revenue acceleration, agility, and cost reduction, supporting the hypotheses discussed in the dissertation. The survey results of this present research also indicated that AI and cloud computing are perceived as the most important future technologies, with no significant difference in interest based on company size. Quantum computing remains a research and development topic with lower priority for C-level and IT management. To summarize hypothesis 1 (H1), the survey results underpin the significance of AI and cloud computing in driving innovation capability and success in the digital era.

The literature review revealed that MSPs primarily target SMBs by offering tailored solutions and applications to help them save costs and time, allowing SMBs to focus on their core business. In addition, large IT vendors also support MSPs and strengthen partnerships with them. Contrary to previous studies, the study results did not find a significant correlation between company size and assessing the relevance of MSPs. Further data analysis showed that small companies rated the relevance of MSPs lower than large companies. However, statistical tests did not find a significant difference, suggesting that the relevance of MSPs may not be dependent on company size. As a result, hypothesis 2 (H2) was supported.

The role of MSPs has evolved significantly, as they are now considered strategic partners involved in business goals, innovation projects, and security measures. They are critical in addressing cybersecurity threats and challenges, creating tailored security concepts for different industry sectors. Server virtualization and careful data storage options also contribute to increased security. The results of the exploratory data analysis indicate that company size is not

necessarily related to interest in innovation or IT security. Overall, MSPs are crucial in ensuring IT systems' reliability, security, and efficiency. Hence, organizations must carefully select MSPs that align with their unique needs and requirements for effective IT security management. However, there is no significant difference in the focus of SMBs on innovation and security compared to large companies. Therefore, hypothesis 3 (H3) was rejected.

Besides the fact that MSPs have become a popular choice for businesses to find IT services, some challenges inhibit their effective utilization. These inhibitors include uncertainties around service quality, reliability, and expertise, potential loss of control over critical IT operations and decision-making, unreliable network operations and SLAs, potential high switching costs, misalignment of skills and competencies of MSP staff with industry requirements, and insufficient maturity of affected business processes. A descriptive statistical analysis of the data revealed that the strongest inhibitors are the insufficient maturity of business processes, followed by fear of losing know-how and increased coordination effort. To summarize, hypothesis 4 (H4) was supported. In addition, the company size was found to have no significant correlation with the assessment of inhibitors.

Establishing close customer relationships and aligning IT functions with clients' business needs is pivotal to staying competitive in the dynamic MSP market. As discovered in the literature review, consultative selling has emerged as an effective strategy for MSPs to achieve this. It focuses on understanding and addressing customer issues throughout the selling process, leading to co-creating solutions and adapting offerings to meet customer requirements. Consultative selling builds customer trust, loyalty, and long-term partnerships, positioning MSPs as trusted advisors rather than just service providers.

The participants in the study ranked the importance of consultative selling. As a result, hypothesis 5 (H5), which compared the interest in consultative selling today and in the future, was rejected. However, the analysis examining the relationship between company size and the importance of consultative selling did not yield significant results. In conclusion, consultative selling was shown as an effective strategy for MSPs in the literature review, which was not reflected in these research results.

5.2 Theoretical and Managerial Implications

5.2.1 Theoretical Implications

The theoretical implications of the research findings in the context of MSPs are significant and provide valuable insights for future studies. The systematic literature review revealed the critical role of knowledge partnerships for MSPs. Levy et al. (2022, p. 5 f.) emphasized the need to rely on innovative technologies to create a comprehensive business networking platform for attracting business customers due to technological excellence. However, academic knowledge is freely accessible to competitors and not protected by patents, which may hinder the unique market positioning of MSP adopters through university partnerships alone. The dissertation also emphasized the importance of co-creation from an early development stage to effectively apply IT services at the client level.

Regarding RQ1, the review highlighted a range of innovative technologies enabling BMI in managed IT services, such as cloud computing and processing, big data, and augmented reality services. The dissertation suggested that MSPs should strive to become platform providers to establish a unique market position. Regarding RQ2, the review found that while there was a comprehensive discussion on technologies enabling BMI in managed services, there was a lack of empirical research on strategies to implement product innovations in the market. As a result, a combination of knowledge partnerships and customer partnerships is a sustainable approach to establishing a unique position in a dynamic market.

Over the past years, a company's **innovation** capability and success have changed dramatically (Caputo et al. 2021). Parker et al. (2016, p. 122 f.) stated that as global competition increases, with the help of digitalization, there is a merger between the boundaries of products and services. To gain a competitive advantage, companies and MSPs must create a new value proposition, including speed and innovation (Schmutte, 2020, p. 41). Additionally, the European Commission (2021, p. 12) included in the Digital Economy and Society Index (DESI) digital technologies as one of the most important success factors, yet due to the integration of digital technologies, they have not performed well in Germany. Moreover, Panetta (2018) showed the relevant technologies over the next years, using

Gartner's hype cycle of emerging technologies, including AI (in general), quantum computing, the IoT, and blockchain. Cloud computing is the foundation for technology trends. It is demand-oriented and flexible with minimal administrative effort. However, cloud computing can create new business potential (BITKOM, 2009, p. 13), in line with the McKinsey Digital study (2019, p. 3), where the top three CEO priorities were mentioned: revenue acceleration, agility (time-to-market), and cost reduction. The survey results supported the theoretical aspects discussed in the dissertation. The mean values of the **future technology** questions showed that AI was perceived as the most important technology, followed by cloud computing and BDA. The IoT, quantum computing, and blockchain were considered less important, confirming hypothesis 1 (H1) that AI and cloud computing are perceived as the most interesting future technologies. Furthermore, the cross-table matrix analysis indicated no significant difference in interest toward the two most interesting future technologies (AI and cloud computing) based on the size of the companies (large companies and SMBs). Both showed similar levels of interest in these technologies, which indicated that the company's size did not significantly impact the perception of these technologies. Another interesting aspect was that quantum computing is still a research and development topic per Rietsche et al. (2022, p. 2525). This research supported these findings because C-level and IT management do not prioritize quantum computing now, nor will they in the next five years. Overall, the survey results aligned with the theoretical aspects discussed in the dissertation, which emphasized the importance of technologies such as AI and cloud computing in driving innovation capability and success of companies in the digital era. Based on the findings of this theoretical review and the research results herein, it is evident that MSPs should focus on key areas to improve services such as IT security, IT networks, server management, and offering the latest technology trends. MSPs should aim to position themselves as industry experts and trusted advisors to their clients, providing valuable insights and recommendations on IT strategies and solutions (Focacci et al., 2013; IBM, 2013; Bedner, 2012).

In particular, IT security is paramount as the demand for security services continues to grow, with more than half of businesses planning to rely on their IT providers for security. MSPs must invest in robust security measures, including firewalls, intrusion detection systems, encryption, and regular security audits to safeguard their clients' data and systems from potential threats (Kaspersky, 2019).

Furthermore, effective IT network management is crucial for ensuring seamless connectivity and optimal performance of client systems. MSPs should focus on designing, implementing, and managing reliable and scalable networks to support their clients' business operations and enable efficient communication and data transfer (Focacci et al., 2013, pp. 2-8). Server management is another critical area where MSPs should excel, ensuring that servers are correctly configured, monitored, and maintained to avoid downtime and performance issues. Keeping up with the latest advancements in server technologies, such as virtualization and cloud computing, is essential for delivering efficient and cost-effective server management services (Bedner, 2012, p. 29). Being an industry expert and a trusted advisor is also vital for MSPs to build long-term customer relationships, which involves staying updated with the latest trends, best practices, and emerging technologies in the IT industry, as well as understanding the specific needs and challenges of clients in different industries (IBM, 2013). Providing consultative selling, where MSPs proactively offer strategic advice and solutions to meet clients' current and future IT requirements, can be a key differentiator in a competitive market (Kaspersky, 2019, pp. 7-12). However, while project management skills may be valuable, they should not be the primary focus for MSPs. Instead, the emphasis should be on delivering reliable and efficient IT services and solutions and building trust and credibility with clients through expertise, professionalism, and exceptional customer service (Saitta and Fjermestad, 2006, p. 9).

In conclusion, MSPs should prioritize IT security, IT networks, server management, staying updated with the latest technology trends, acting as industry experts, and providing consultative selling to meet clients' evolving needs and stay competitive in the market. By excelling in these areas, MSPs can establish themselves as trusted advisors and valuable partners to their clients, ensuring their success in the dynamic world of IT services. As companies navigate the complex and rapidly evolving IT landscape, partnering with MSPs can offer strategic advantages and contribute to their success.

In the literature research, it was a clear preference for **company sizes**, where MSPs concentrate on: MSPs are focused on SMBs (Ghezzi and Balocco, (2016, p. 4740) and Focacci et al. (2013, pp. 6-8)). Ghezzi and Balocco (2016) found that IT resellers focused on local markets and SMBs. However, SMBs or large companies

have no clear preference for working with MSPs. While MSPs tend to focus on SMBs, larger companies may also benefit from the services they offer, especially in areas lacking internal expertise or resources. Focacci et al. (2013) highlighted that MSPs primarily target SMBs by creating tailored solutions and applications to help them save costs and time, allowing SMBs to concentrate on their core business. MSPs also constantly develop new services, including the latest technologies, which provides an advantage for SMBs as they do not need to invest in new IT infrastructure or software licenses every time while offering predictable cost streams over the coming years. According to Focacci et al. (2013), SMBs tend to outsource non-core functions to MSPs, allowing their internal IT staff to focus on tactical and strategic business issues. Furthermore, large IT vendors are keen to support the business of MSPs while strengthening partnerships and the partner ecosystem, as reported by the literature review. In addition, Seltsikas and Brown (2006) found that the MSP model is focused on providing complex solutions to SMBs, with monthly rent options being more attractive to smaller companies. The strategic “make or buy" question is relevant to companies considering MSP services. The study results indicated that the relevance of MSPs is slightly above average. Additionally, a cross-table matrix revealed a tendency toward higher ratings by larger companies. However, a correlation analysis did not find a significant correlation between company size and assessing the relevance of MSPs. This finding contradicted the findings of the literature review, which suggested that SMBs are more likely to work with MSPs based on previous studies. Further exploratory data analysis showed that small companies rated the relevance of MSPs lower than large companies based on mean values. However, a Mann-Whitney U test did not find a significant difference in the interest in the relevance of MSPs between small and large companies. Hence, the relevance of MSPs may not be dependent on the company’s size, leading to the confirmation of the hypothesis (H2).

The role of IT service providers has evolved significantly in recent years, as they are increasingly involved in business goals and innovation projects as strategic partners, as noted by BSI (2012, p. 79). This shift highlights the growing importance and the **key reasons** of IT service providers in shaping the strategic direction of organizations beyond providing technical support. One of their key benefits

highlighted by Focacci et al. (2013, p. 8) is the technical dynamics they bring to organizations. IT service providers are equipped with the latest technological advancements and best practices, which can contribute to increased reliability and security of IT systems and improve operational efficiency and reduced downtime, which are crucial for modern businesses to thrive in a competitive landscape. In ensuring robust security measures, IT service providers with higher specialization and greater expertise in security play a critical role, as highlighted by Borges and Werners (2018, pp. 18-20). With the ever-increasing cybersecurity threats and challenges, having IT service providers with strong security capabilities is critical in safeguarding organizations' sensitive data and protecting against potential breaches and attacks. MSPs also play an essential role in addressing threats related to ITO, as highlighted by Lee et al. (2012, pp. 550-558). They can create security concepts tailored to the specific demands of industry sectors, considering the unique risks and vulnerabilities associated with each sector. This tailored approach ensures that organizations' IT systems and data are protected with the most relevant and effective security measures. Another aspect contributing to increased security is server virtualization, as mentioned by Lanzrath (2012, p. 42). By virtualizing servers, organizations can create a more secure environment for their data and systems, reducing the risk of unauthorized access and minimizing downtime. This enhancement provides an added layer of security crucial to safeguarding sensitive data and ensuring smooth operations. When it comes to data storage, organizations must carefully consider the location and control of sensitive data. BSI (2012, p. 79 f.) highlighted that storing sensitive data in the public cloud requires proper control due to legal and contractual regulations, guidelines, and data protection requirements. Private clouds are often considered more secure as they provide more direct control over the data and are subject to fewer regulatory constraints. In addition, cost savings are a significant driving factor for organizations when outsourcing IT security management, as noted by Kaspersky (2019, p. 7). Working with MSPs can reduce costs, as organizations can leverage the expertise and resources of external IT service providers rather than investing in expensive in-house capabilities. Additionally, IT security management services can help organizations address SLAs and accountability concerns, which are crucial in ensuring quality service delivery. Moreover, outsourcing becomes a viable option for organizations with limited internal resources and expertise to

ensure business continuity with sufficient certainty. The results of the exploratory data analysis conducted to test hypothesis 3 (H3), focusing on the relationship between company size and interest in innovation and IT security, indicated that the assumptions for a t-test were not met due to the data not being normally distributed. Therefore, a Mann-Whitney U test was conducted instead. The results showed no significant difference between small and large companies in terms of their interest in innovation or IT security. Although the means indicated a difference, it was not statistically significant. Hence, company size is not necessarily related to interest in innovation or IT security. Thus, hypothesis 3 (H3) was rejected. The conclusion was that SMBs may have a slightly higher interest in innovation and IT security than large companies, but the difference was insignificant. Overall, IT service providers increasingly play a strategic role in organizations, contributing to business goals, innovation projects, and security measures. With their technical expertise, specialization, and innovative solutions, IT service providers are crucial in ensuring IT systems' reliability, security, and efficiency. MSPs, server virtualization, and careful data storage options also increase security. Organizations must carefully select MSPs aligned with their unique needs and requirements to effectively manage IT security and drive business success in today's technology-driven landscape.

In the contemporary rapidly evolving business landscape, organizations are consistently exploring avenues to enhance their IT operations and maintain their competitiveness. One approach that has gained popularity in recent years is partnering with MSPs to outsource certain. The purpose of this dissertation was to explore the relevant factors why organizations choose to work with MSPs. With the help of the research, three main benefits were identified: cost savings, IT modernization, and risk reduction. Furthermore, none of the models showed significant differences between the small and large companies.

One of the primary reasons organizations turn to MSPs is the potential for cost savings. IT operations can be complex and costly, requiring significant hardware, software, personnel, and infrastructure investments. Thus, organizations can often achieve cost efficiencies through economies of scale by outsourcing IT functions to an MSP. MSPs typically have specialized expertise and resources that allow them to deliver IT services more efficiently and cost-effectively than organizations can achieve in-house. For example, MSPs can leverage their

purchasing power to negotiate favorable pricing on hardware and software and spread the costs of expensive IT infrastructure across multiple clients, resulting in lower costs for each organization. Additionally, MSPs can provide flexible pricing models, such as pay-as-you-go or subscription-based pricing, which allow organizations to scale their IT services up or down based on their needs and budget, providing further cost savings.

Another key reason organizations work with MSPs is to modernize their IT operations. Technology is constantly evolving, and organizations must stay current with the latest advancements to remain competitive. However, IT modernization can be challenging and resource-intensive, requiring significant investments in upgrading hardware, software, and skills. MSPs can help organizations modernize their IT operations by providing access to cutting-edge technologies and expertise. For example, MSPs can offer cloud computing services, allowing organizations to migrate their IT infrastructure and applications to the cloud for increased scalability, flexibility, and cost savings. MSPs can also provide expertise in emerging technologies such as AI, the IoT, and cybersecurity, helping organizations stay ahead of the technology curve. Hence, organizations can partner with MSPs to accelerate their IT modernization efforts and stay competitive in the rapidly evolving technology landscape.

The third main reason companies work with MSPs is to reduce IT-related risks. IT operations are vulnerable to various risks, including cybersecurity threats, data breaches, system failures, and compliance violations. These risks can severely affect organizations, including financial losses, reputational damage, and legal liabilities. MSPs can help organizations mitigate these risks by providing robust cybersecurity measures, disaster recovery plans, and compliance frameworks. MSPs typically have extensive expertise and experience in managing IT risks, and they can implement best practices and industry standards to protect organizations from potential threats. Additionally, by outsourcing IT functions to MSPs, organizations can transfer some of the risks associated with IT operations to the MSPs, reducing their exposure to potential liabilities.

The findings from the NTT Data (2022) results aligned with the cost savings benefits highlighted in the dissertation. Both studies - NTT Data (2022) and this research - emphasized the importance of transparency in IT spending and improved IT control as key objectives in cost management. The NTT Data results

also highlighted the significance of risk sharing and cost reductions through flexible payment models, consistent with the potential cost efficiencies achieved through economies of scale and flexible pricing models offered by MSPs. The dissertation further underscored the potential for IT cost savings through MSP partnerships since they can leverage their purchasing power to negotiate favorable pricing on hardware and software and spread IT infrastructure costs across multiple clients. This finding aligned with the NTT Data results, where improved IT controlling and cost reductions through flexible payment models were identified as important objectives in the area of costs. Overall, the findings from the NTT Data (2022) results and the dissertation consistently highlighted cost savings as a key benefit of working with MSPs. Companies are increasingly seeking how to optimize their IT operations and achieve cost efficiencies. MSP partnerships can provide the potential for achieving these objectives.

As stated, dependency on a MSP can pose potential risks to companies, regardless of size. However, the strongest inhibitor is the insufficient maturity of affected business processes, followed by the fear of losing know-how. Overall, trust and confidentiality are crucial factors in the MSP relationship, so organizations must carefully assess the security measures and data handling practices of the MSP to mitigate potential risks. Furthermore, the dissertation findings indicated generally no difference in the usage of MSPs between large companies and SMBs. While large companies may have more resources and bargaining power, SMBs can benefit from MSP partnerships in accessing advanced technologies, industry expertise, and cost savings. However, regardless of size, companies should carefully evaluate the risks and benefits of MSP partnerships, considering factors such as vendor lock-in, data security, and confidentiality, to make informed decisions and mitigate potential risks associated with dependency on an MSP. Proper contractual agreements, SLAs, and ongoing monitoring and evaluation of the MSP's performance can help organizations manage these risks effectively.

MSPs have gained popularity recently as a strategic solution for businesses to outsource their IT operations and services. However, despite the growing demand for MSPs, some businesses still face challenges or **inhibitors** when it comes to working with them. Identifying and understanding these inhibitors is crucial for businesses to effectively leverage MSPs and optimize their IT operations. This

section is about the largest inhibitors of working with MSPs, drawing on the literature review and research results. Dittrich and Braun (2004, p. 3) mentioned that companies use IT service providers to support their corporate strategy focus, business processes outsourcing, and strategic consulting. According to Focacci et al. (2013, p. 56 f.), whether to "make or buy" IT-related services often poses challenges for organizations when considering working with MSPs. In addition, limited past experiences with MSPs can hinder organizations from fully leveraging their potential benefits, including uncertainties around service quality, reliability, and expertise. Organizations may become dependent on external companies like MSPs, which can raise concerns about losing control over critical IT operations and decision-making. Furthermore, MSPs may offer varying service portfolios, including unreliable network operations and SLAs that do not meet organizational requirements, leading to potential service disruptions and dissatisfaction. Hence, in the long term, if the mentioned shortcomings arise, they could reduce costs when outsourcing to MSPs due to increasing costs and possible high switching costs if transitioning to a different MSP or bringing services back in-house. One additional point can be that the skills and competencies of the MSP staff may not align with the specific industry requirements of the organization, leading to challenges in achieving desired outcomes and value from the partnership. The study conducted a descriptive statistical analysis to test hypothesis 4 (H4), focusing on the mean values of the variable "Inhibitors." As a result, the strongest inhibitors were the insufficient maturity of affected business processes and the fear of losing know-how, which supported hypothesis 4, showing that companies want to focus on specific BPOs (Dittrich and Braun, 2004, p. 3). However, they need to work on their processes to make them ready to be delivered by an external IT provider. Next, the fear of losing know-how was the second strongest inhibitor, while the third-ranked inhibitor was the risk of increased coordination effort. Further analysis was conducted to examine the correlation between these inhibitors and company size, but no significant results were found, indicating that company size did not play a significant role in the assessment of inhibitors.

Meanwhile, MSPs have witnessed significant growth and evolution. With the increasing reliance on IT functions for business operations, MSPs have become crucial partners for organizations in managing their network, applications,

security, support, and administration on clients' premises, according to Smith and Kumar (2004, p. 984). To stay competitive in this dynamic market, MSPs need to establish close customer relationships and align their IT functions with the business needs of their clients (Chang et al., 2021, p. 212). One effective strategy to establish and cultivate close customer connections in the MSP sector is **consultative selling**. As stated by Poeppelbuss et al. (2022), consultative selling focuses on understanding and addressing customer issues throughout the selling process, from the early development stage to utilizing the service (Pathak et al., 2020, p. 4). This approach can enable MSPs to co-create solutions with their customers, considering their specific requirements and adapting their products to changing customer demands. Research by Levy et al. (2022) highlighted the importance of consultative selling in building customer trust and loyalty. Customers expect comprehensive protection against threats from their MSP and expertise in information security. A lack of competence in this area can result in the loss of customers and jeopardize the trustworthiness of an MSP as a consultant and partner. Therefore, consultative selling becomes critical to establishing a close customer relationship between the end customer and the MSP while enabling MSPs to establish a unique market positioning. By proactively addressing customer issues and adapting their offerings to meet customer requirements, MSPs can move from a push marketing approach to an attraction marketing pull approach (Levy et al., 2022). Thus, customers can proactively approach MSPs when requiring new solutions or adaptations, leading to stronger and more sustainable customer relationships. Furthermore, consultative selling aligns with the corporate strategy focus of many MSPs. As businesses increasingly outsource their IT functions, MSPs need to provide technical expertise and strategic consulting services to help their customers achieve competitive advantage, shorter cycle times, and lower development costs, as mentioned by Saitta and Fjermestad (2006, p. 9). Consultative selling allows MSPs to understand and address the strategic needs of their customers, positioning them as trusted advisors rather than just service providers. Hypothesis 5 (H5) compared the interest in working with MSPs in consultative selling today and in the following years, which were tested using a ranking scale from 1 to 6 (1 = strongly agree; 6 = strongly disagree). As a result, the participants ranked the importance of consultative selling as high for companies currently and in the next five years. Further calculations were conducted to

examine the relationship between company size and the importance of consultative selling, but no significant results were found in the correlation and cross-tabulation analysis. Therefore, hypothesis 5 was rejected, as there was no statistical significance for the future importance of consultative selling among different-sized companies. In conclusion, consultative selling has proven an effective strategy for MSPs to establish and maintain close customer relationships in the dynamic and competitive MSP sector. MSPs can build trust, loyalty, and long-term customer partnerships by focusing on customer issues, co-creating solutions, and adapting offerings to meet customer requirements. Consultative selling also aligns with the corporate strategy focus of many MSPs and enables them to establish a unique market positioning. In today's customer-centric business landscape, consultative selling is a crucial element in the success of MSPs.

The rejection of two of six hypotheses underscored the importance of objectively interpreting research results, even when they do not align with expectations. While the rejected hypotheses indicated weaker or non-existent relationships between variables, they offered an opportunity for further exploration and refinement of the research framework. This outcome highlights the need for objectivity in research interpretation, emphasizing the importance of critical analysis and identifying areas for future research.

In conclusion, the research findings provided important theoretical implications for the IT literature and the MSP market, which is shown in Table 41. They highlighted the need for further exploration and refinement of the research framework, identifying areas for future research and underscoring the importance of objectivity in research interpretation. The findings also provided valuable insights into the factors influencing companies' decisions to work with MSPs and obstacles hindering their effective utilization. The study showcased MSPs driving innovation with AI and cloud computing. Finally, the dissertation highlighted the significance of an effective strategy for MSPs to establish close customer relationships and align IT functions with clients' business needs.

Table 41: Theoretical Implications and Contribution

Theoretical Implications	Supporting Evidence	Contribution with own Research Results	Outcome
1 Innovation matters	Significant transformation in a company's innovation capability and success, highlighting the dynamic nature of innovation and to attain a competitive edge, observed by e.g., Caputo et al. (2021), Parker et al. (2016) or Schmutte (2020).	Embracing the latest technology is essential for companies to innovate, gain a competitive edge, and meet evolving market demands. IT modernization is a critical driver of innovation, ensuring that businesses remain agile and capable of adapting to changing industry landscapes while minimizing risks (part of RQ3 and RQ4).	Adding value to theoretical studies.
2 Key technologies	Emerging technologies ensure that companies stay relevant, focus on core competencies and are responsive to changing market dynamics as stated by Panetta (2018), BITKOM (2009) and McKinsey (2019).	Research indicates that companies are investing in new technologies, mainly in AI and cloud computing to drive innovation capability (confirmed by H1).	Similarity
3 Influencing factor: Company size	MSPs target SMBs referred to e.g., Ghezzi and Balocco (2016), Focacci et al. (2013) and Seltsikas and Brown (2006).	Based on the results, this changed over the last years, there is no significant correlation between company size and assessing the MSP relevance (confirmed by H2), that's why MSP need to adjust their BM (Table 44).	Adding value to theoretical studies.
4 Reasons to work with MSPs	Enhance IT system reliability, security, and efficiency are critical for thriving in today's competitive business environment. Specialized providers with expertise in security play a vital role in ensuring robust security measures highlighted by Borges and Werners (2018), Lee et al. (2012) and Smith and Kumar (2004).	The three main reasons based on the research are high availability of services, capture free capacity internally, and have a transparent cost strategy (part of RQ3). Key areas to focus on are illustrated in Figure 41.	Adding value to theoretical studies.
5 Inhibitors to work with MSPs	Companies utilize IT service providers for corporate strategy support, business process outsourcing, and strategic consulting, as noted by Dittrich and Braun (2004) and Focacci et al. (2013).	The research found that the main barriers are immature business processes, fear of knowledge loss, and increased coordination effort (confirmed by H4). However it's not yet reflected in reality that MSPs elaborate and support on BPO.	Adding value to theoretical studies.
6 Consultative selling	It involves addressing customer issues, co-creating solutions, and adapting offerings to meet customer needs throughout the selling process inlcuding consultative selling (incl. knowledge partnerships and co-creation approaches) stated by Levy et al. (2022) and Pathak et al. (2020).	Participants strongly believe that consulting services hold significant relevance for companies presently. This effectiveness in the future was not significant in the research findings (rejected by H5).	Adding value to theoretical studies.

Source: Own depiction

5.2.2 Managerial Implications

Engaging with MSPs presents managerial implications crucial for businesses navigating today's complexities. MSPs offer enhanced operational efficiency and scalability. By outsourcing specific IT functions or other specialized tasks, companies can tap into a reservoir of expertise and technological resources that might be prohibitively expensive or time-consuming to develop in-house. The decision-making process faced by managers and C-level executives when selecting the most suitable MSP is of pivotal importance. As a recommendation, the suggestion is employing a utility analysis to customize and weight decision criteria according to the specific needs and circumstances of the company. This point-based system serves as a decision support tool. The intricacies of the utility analysis, however, fall beyond the scope of this dissertation.

MSPs have emerged as essential partners for organizations seeking to optimize their IT operations and enhance overall **efficiency**. Drawing insights from existing research and industry best practices, this section discusses the managerial implications of strategically leveraging MSPs for efficiency. Caputo et al. (2021), Parker et al. (2016) and Schmutte (2020) emphasize the strategic importance of delegating routine IT tasks and support functions to MSPs, a practice that allows organizations to strategically redistribute their internal resources. This insight carries notable implications for managerial decision-making. Managers are recommended to undertake a thorough evaluation of their organization's IT resource allocation strategy. By identifying tasks suitable for outsourcing, such as routine maintenance, helpdesk support, and infrastructure management, managers can streamline operational processes. This, in turn, empowers in-house teams to redirect their efforts toward core strategic endeavors, enhancing the organization's overall agility and competitive edge. Zuehlke and Roevekamp (2004) and IDG Research Services (2020 / 2021) highlighted substantial cost-saving potential associated with MSPs, with the potential to reduce IT costs. This outcome primarily derives from the utilization of cost-effective service agreements and the advantages of economies of scale and is supported by the research. The implications for managerial decision-making are noteworthy. Managers are encouraged to embark on a thorough and meticulous cost-benefit analysis when considering MSP

partnerships. Leveraging MSPs with favorable service agreements and finely-tuned service levels can result in significant cost reductions without compromising service quality. Such a strategic approach not only optimizes cost control but also enhances operational efficiency, aligning IT expenditures with organizational objectives and financial prudence.

One of the primary managerial implications for companies **working with strategic selected MSPs**, is the need to redefine their internal IT strategies. When outsourcing IT functions to MSPs, organizations can redirect their internal resources and focus on core competencies, and strategic initiatives. This shift allows companies to stay competitive in their respective markets, adapt to changing industry trends more efficiently, and allocate resources where they are needed most. For addressing the particular topic within a company, the initial question to be answered should revolve around the classic "make or buy" dilemma stated by Gründer (2021) and Koenning et al. (2019). Depending on the subject matter, service-specific categories, products, and services, along with their respective weighting, also come into play. Companies must, however, maintain a strong oversight role when collaborating with MSPs. This involves clear communication of organizational objectives and performance expectations. Effective governance mechanisms, including SLAs and KPIs, are essential to ensure that the MSP's services align with the company's strategic goals.

Whenever a new technology, service, or consultancy is introduced, assessment criteria must be established. These criteria should align with the company's overall IT strategy and business strategy. Additionally, compliance with corporate policies related to security, data protection, and availability must be taken into consideration. Therefore, the recommendation for the management level is to conduct an analysis outlining the precise reasons and purposes for employing an MSP. This analysis should be harmonized with the company's IT strategy and overarching business objectives. For instance, it may involve scrutinizing internal processes and functions within a specific domain. The central questions can be e.g., whether a service has been defined for the respective function, how differentiation is achieved, and whether the cost structure is transparent. Equally crucial is understanding the rationale behind MSP utilization. In most cases, it revolves around the potential for cost optimization. Factors such as provider strategy,

industry expertise, time horizon, SLAs, latest technology, and financial stability must also be considered. A representation of these considerations is provided in Table 42.

Table 42: Key Questions for MSP Selection

Sequences	Key Questions and Facts	Contribution
1 Starting point	Is there a need for IT services?	Identify need of a company referring to e.g., Schiuma et al. (2021) or Weinrauch and Fang (2021). Combining with research (SQ9, 10, 16) to identify value of IT for the organization.
2 Needs	What are the specific IT needs? (e.g., Standard business software, Mailserver, Application Mgmt., Helpdesk, Data archiving, IT networks, IT security, Server Mgmt., Virtualization, Project Mgmt.)	Relevant services merged consulting and academic studies e.g., IDG Research Services (2020 / 2021). Underpinned by research (SQ14). Main services: IT security, IT networks, and Server Management (Table 34).
3 Decision	Can the IT needs be met in-house?	Academic research for "make or buy" decision according to e.g., Gründer (2021) and Koenning et al. (2019).
4 Considerations	Is working with MSPs cost-effective? Do the company lack the necessary expertise in-house? Is IT a core part of the companies' business?	Foundation is the merge of consulting and academic studies e.g., Focacci et al. (2013) and NTT DATA (2022). For utilizing RQ4: SQ12 was analyzed as one example and the results are shown in the following Tables 30-33.
5 Vendor Selection	Identify the relevant factors, which are important for the selection. (e.g., legal, compliance, industry expertise, latest technology, and SLAs)	The literature is reflecting new business strategies stated by e.g., Pathak et al. (2020) or Levy et al. (2022) and relevant factors mentioned by NTT DATA (2022). In addition results of SQ15 (Table 35) illustrate the main factors to focus on. Furthermore the results of H3 and H4 are providing further value to address RQ3.

Sequences	Key Questions and Facts	Contribution
6 Implementation	Is there a concrete plan for the implementation and transition in place? (e.g., Data migration, staff training, monitor vendor performance, periodic reviews, identify areas for improvement)	Future line of research.
7 Exit	Do you have a exit strategy in worst case scenario?	Future line of research.

Source: Own depiction

Overall, working with MSPs allow for cost savings and empower internal teams to focus on core business functions, **fostering innovation** and growth. The goal is to leverage state-of-the-art technologies, industry acumen, and financial stability, ranging from cloud computing to AI, big data, and augmented reality services. Hence, companies should evaluate the MSP's history in deploying and overseeing advanced technologies, ranging from cloud computing to AI, big data, and augmented reality services. Equally significant is the MSP's industry expertise. A profound comprehension of the specific sector in which a company operates allows the MSP to offer tailored solutions, ensuring alignment with industry norms, compliance mandates, and established best practices. This selection criteria involves thoroughly assessing the MSP's track record in serving industry players and offering strategic technology-driven business expansion options. In addition, the final selection criteria for the MSP is a solid financial situation. An in-depth analysis of its financial health, encompassing performance metrics, and stability indices is pivotal. Insights derived from NTT DATA (2022) comprehensive analysis of IT service sector underscore the transformative potential of entrusting non-core functions, notably IT support, in enabling organizations to liberate substantial resources for innovation and strategic expansion initiatives. So, managers are urged to carefully consider the strategic advantages of working with MSPs. By doing so, organizations can free up their internal teams to focus on honing their core competencies and pursuing strategic endeavors with greater vigor. This

deliberate emphasis on innovation and strategic development not only bestows a competitive advantage but also serves as a catalyst for sustained business growth.

However, delegating operations to an external service provider mandates stringent supervision to secure data sanctity, guarantee service excellence, and ensure alignment of the MSPs offerings with the organizational goals. Any issues, such as data breaches or service disruptions from the MSP, can impact the company's reputation, triggering considerable financial and operational consequences. Furthermore, the C-level or IT manager to **MSP relationship** dynamics require careful navigation. Trust is of paramount importance in the relationship between a company and its MSP as stated by Focacci et al. (2013) and Venkatesh and Singhal (2017). This trust is built on several key elements. First, it hinges on the MSP's unwavering reliability, consistently meeting or exceeding service level agreements and maintaining system uptime. Trust is further cultivated through open and transparent communication, providing clear reporting on service performance, security measures, and incident handling. A robust security posture and proactive threat mitigation efforts are vital in reinforcing trust, as is the MSP's demonstrated expertise, industry certifications, and a track record of successful implementations. Additionally, the MSP's ability to adapt and scale its services as business needs evolve contributes to trust, as does its alignment with the company's culture, values, and goals. Ethical conduct, integrity, and compliance with industry regulations are fundamental for trust, and a responsive support system that swiftly addresses issues further solidifies the relationship. In essence, trust is the cornerstone of a productive and enduring partnership that empowers the company to navigate technological challenges and achieve its objectives with confidence.

Clear communication should ensure that both parties have aligned expectations and understand their respective roles. Contractual agreements should be meticulously crafted to clarify responsibilities, SLAs, and remediation processes in the event of discrepancies or failures. Periodic performance evaluations and feedback loops can further ensure that the MSP’s services evolve in tandem with the organization's changing needs. In conclusion, while MSPs offer significant advantages in expertise and efficiency, IT managers must be proactive in balancing

the benefits of external partnerships with the imperative of maintaining control and oversight over critical business functions.

In addition to the managerial implications for companies, there are findings from this research (analyzed in Chapter 4), which are **pivotal for the BM of MSPs**. The MSPs need to prioritize certain key areas. For their offerings it is essential to ensure high availability that their clients' critical IT systems and infrastructure remain accessible and operational around the clock. This minimizes downtime, safeguards against potential revenue losses, and bolsters the MSP's reputation for reliability. Furthermore, high availability is instrumental in meeting SLAs and contractual obligations, fostering trust between MSPs and their clients. From the client's perspective, dependable high availability services translate into uninterrupted business operations, reduced risks of data loss or service disruptions, and enhanced overall productivity. Clients rely on MSPs to provide the technological backbone that supports their daily operations and competitive edge, making high availability a non-negotiable requirement. In addition to that, a transparent pricing and cost structure is important for both parties (MSPs and their clients) as it establishes a foundation of trust, financial predictability, and mutually beneficial collaboration. For MSPs, transparency in pricing demonstrates a commitment to fair and ethical business practices. It allows them to build and maintain trust with clients by providing clear insight into the costs associated with the services rendered. This transparency also facilitates accurate budgeting and financial planning for clients, enabling them to make informed decisions about their IT investments. Clients can assess the value proposition of MSP services more effectively when costs are transparent, ensuring they receive a fair return on their investment. Furthermore, it minimizes the risk of unexpected charges, which can lead to dissatisfaction and strained relationships. Overall, a transparent pricing and cost structure contribute to a positive and enduring partnership, aligning the interests of MSPs and clients while fostering a conducive environment for long-term collaboration and mutual growth. Moreover, better support and shorter-time-to-market are key parts, as they directly impact the efficiency, agility, and competitiveness of businesses in today's fast-paced digital landscape. For MSPs, offering superior support services ensures that clients receive prompt assistance and issue resolution, reducing downtime and potential disruptions to business

operations. This enhances client satisfaction, strengthens the relationship, and bolsters the reputation for reliability and responsiveness. In addition, shorter time-to-market, on the other hand, enables MSPs to quickly adapt to emerging technology trends and provide innovative solutions. It allows clients to implement new technologies, applications, or services swiftly, gaining a competitive edge in their respective markets. Ultimately, the combination of better support and shorter time-to-market positions MSPs as valuable partners that enable clients to navigate the complexities of the digital landscape with agility and confidence, fostering a win-win dynamic that drives success. Lastly for MSPs, having professionals with deep knowledge and experience in specific industries is essential for tailoring solutions that align with the unique challenges, regulations, and technology requirements of those industries. Such expertise enhances the MSP's ability to provide specialized services and insights, positioning them as trusted advisors. During the hiring process, they benefit from seeking candidates with industry-specific knowledge, as it equips their teams to better understand client needs, expectations, and specific pain points. For clients, MSPs with external industry expertise offer distinct advantages. They can provide solutions that are not only technologically sound but also highly relevant to the client's specific industry context jointly with a consultative selling approach. This expertise ensures that IT strategies and solutions are aligned with industry best practices and compliance requirements, minimizing risks and optimizing operations. These priorities not only enhance the competitiveness of MSPs but also strengthen their value proposition in an increasingly dynamic IT services market.

The Table 43 summarizes the managerial implications, provides supporting evidence, explains the contribution of own research results, and outlines the expected outcomes of this dissertation, which are related to the BMI of MSPs.

Table 43: Managerial Implications and Contribution

Managerial Implications	Supporting Evidence	Contribution with own Research Results	Outcome
1 Leveraging MSPs for Efficiency	Outsourcing specialized tasks through MSPs enhances operational efficiency as stated by Dittrich and Braun (2004) or Focacci et al. (2013).	Based on the survey, MSPs offer advantages in expertise and efficiency for end clients (part of RQ3 and RQ4).	Similarity
2 Strategic MSP Selection and comprehensive criteria	Customized criteria, aligned with company goals, are vital for the right MSP selection based on Focacci et al. (2013). Consider various factors, including cost optimization, industry expertise, technology, and financial stability, according to e.g., NTT Data (2022) and IDG Research Services (2020 / 2021).	Relevant reasons for working with MSPs and inhibitors for companies are discovered with RQ3, RQ4, and H4. Key questions for end clients to decide on the suitable MSP are shown in Table 42. The benefits extend beyond cost savings, efficiency improvements and have impact on competiveness of a company.	Adding value to theoretical studies.
3 Unlocking Innovation Potential	Identify innovation potential with new technoligies as stated by BITKOM (2009), McKinsey (2019) and Panetta (2018). Additional potential can be leveraged by knowledge partnerships according to e.g., Levy et al. (2022).	First, the technology, such as AI and cloud computing are helping companies to innovate. Additionally, the results of RQ3 and RQ4 demonstrate how MSPs can support their end clients with risk reduction, IT modernization, cost savings, and free up internal capabilities. BM building blocks are shown in Table 44.	Adding value to theoretical studies.
4 Effective Relationships and MSP Strategy	Clear communication and agreements are essential in C-level relationships with the right strategy to focus on service exellence, which relates to Venkatesh and Singhal (2017a).	Creating strong client relationships and aligning IT functions with business needs are essential in the dynamic MSP market. Consultative selling is a proven strategy for achieving this, as highlighted in the literature review and the study showed to be careful about the inhibitors (H4) and have the same focus on consultative selling as today (H5).	Adding value to theoretical studies.

Source: Own depiction

5.3 Comprehensive Synthesis

In today's digital era, the profound influence of digitalization on BMs and the increasingly significant role of MSPs cannot be understated. As highlighted in the theoretical framework in Chapter 2, various models clarify the dynamics of digital transformation and its economic implications. As Petry (2019, p. 23) articulated, digitalization is a transformative process that gives rise to significant modifications through the escalating interconnection of individuals, entities, processes, and products. This metamorphosis not only reshapes the growth trajectory of companies but also amplifies their innovative capabilities. Furthermore, a BM is a blueprint for a company with the aim of profit generation, including a focus on introducing innovative products or services tailored for a (niche) market segment (Lindemann, 2011, p. 268 f.). In addition, the BM canvas framework (illustrated in Figure 18) facilitates a unified comprehension among all stakeholders, encouraging an open discourse, aiming to enhance and increase the effects of BMI (Burkett, 2016, p. 9).

Panetta (2018) accentuated the pivotal role of digital ecosystems, emphasizing the indispensable nature of relationships between diverse market participants, especially in the realm of digital platforms, as shown by Gartner. This perspective was stated by Lemke et al. (2017, pp. 123-137), who illuminated the opportunities that emerging technologies present, especially in catalyzing BMIs and fostering groundbreaking advancements. Parker et al. (2016, p. 122 f.) plunged deeper into the evolution of BMs, underscoring an increasing trend of integrating products with services. This integration aims to augment efficiency and carve out a unique way for value creation. Turchi (2018) provided a comprehensive breakdown of digital transformation, segmenting it into three distinct tiers: business strategy, corporate execution, and enabling technologies. Each tier captures specific facets of the transformation, from strategy formulation and execution to the integration of cutting-edge technologies, laying a robust foundation for MSPs.

Schallmo et al. (2016, p. 17 f.) stated how elements of a BM can be synergistically enriched and fused through the seamless integration of pioneering technologies and the formulation of visionary strategies, ensuring a robust defense against competitors. The four-box model and the digital enterprise integrated

management framework offer further insights into the components of a BM, as described in Sections 2.3.3.2 and 2.3.3.3. Fitzgerald et al. (2013, p. 4) suggested that digitalization empowers businesses to carve out competitive advantages, thereby elevating value creation by strategically incorporating avant-garde technologies. This process encompasses a spectrum of initiatives, from process automation and data analytics to the strategic expansion of MSPs' offerings, ensuring they remain at the forefront of innovation. There is also a pronounced focus on optimizing processes, leveraging technology for omnichannel architectures, and carefully managing partner networks (Lembke and Honal, 2015, pp. 62-69).

The dynamic capabilities framework, detailed in Section 2.4.1 and employed for the scientific literature review in Section 3.2, highlights the imperative of agility, especially in the face of rapidly evolving market environments. This framework's foundation is based on capital, expertise, managerial adaptability, and the seamless adoption of novel technological domains, all pivotal for successful BMI (Devi et al., 2022, p. 500). The entrepreneurial conditions of a region play a critical role, with the GEM offering invaluable insights into the dynamics and impacts of entrepreneurship (Wennekers et al., 2005, pp. 294-297). Despite the challenges of the pandemic, the strengths and vulnerabilities of the German-speaking region have demonstrated remarkable resilience (Sternberg et al., 2022).

The business ecosystem model propounded by Moore (1996, p. 27) is comprehensive, encompassing the business ecosystem, extended enterprise, and core business. In the wake of digitalization, the boundaries delimitated products and services have become increasingly unclear (Schmutte, 2020, p. 41). Hence, MSPs must recalibrate their strategies, pivoting toward new values, speed, and innovative technologies. Cloud computing and AI are only two examples that have emerged as top CEO priorities, driving revenue acceleration, agility, and cost reduction, as stated in McKinsey’s study (2019, p. 3). While there is no distinct preference between SMBs and large corporations collaborating with MSPs, the latter often seeks valuable partnerships and ecosystem expansion (this study’s research result in Chapter 4). IT service providers have evolved into strategic alliances of companies (BSI, 2021, p. 79) with technical dynamics being outstanding (Foccai et al., 2013, p. 8). MSPs, equipped with innovative technologies, offer cross-company platforms to meet customer requirements. Collaborations with academic

institutions (e.g., with universities) can serve as a differentiator, fostering co-creation and spearheading product innovations.

In conclusion, while digitalization is bringing challenges, it also unveils many opportunities for MSPs. Companies can use insights from different frameworks and models by skillfully adapting to this changing paradigm and understanding the changing role of MSPs, guiding them toward sustainable growth while ensuring they stay at the forefront of innovation. Lindemann (2011, p. 268 f.) enforced the imperative nature of continuous evaluation and adaptation of BMs in light of shifting market dynamics, emergent trends, and evolving customer demands. The essence of such adaptation lies in the meaningful merger of individual components.

The digital transformation framework (digital enterprise integrated management framework shown in Figure 23) provides a structured, flexible blueprint for this adaptation. Rather than being prescriptive, this five-tiered model is adaptable and tailored to address diverse business sectors' unique challenges, requirements, and maturity levels. As businesses go through the digital knowledge spectrum, they focus on getting stakeholders close to cutting-edge trends like big data, the IoT, and machine learning. Conventional training modules, workshops, and demonstrations, particularly within the digital innovation lab, are instrumental in this knowledge spread (Thite and Bhatta, 2018, p. 43). Therefore, the emphasis shifts to prototype development from discerned use cases, serving as flagship initiatives when progressing through the framework (Bargh and Troxler, 2020, p. 341). The subsequent "Direction" phase mandates organizational, procedural, and technological recalibrations (Bargh and Troxler, 2020, p. 360). The "Industrialization" phase is characterized by the quest for scalable solutions, platform conceptualization, and team assembly to champion enterprise digitalization (Enderlein, 2019). The culmination, the "Improvement" stage, witnesses a surge in demand for practical insights, often facilitated through external expert consultations, underscoring the significance of coaching, ITO, and collaborative platforms (Enderlein, 2019). For succeeding during the last phase, IT industrialization, a company's innovative skills are pivotal for client acquisition and establishing a competitive perspective (Lembke and Honal, 2015, pp. 62-69).

To further process the BMI for MSPs, draw from the theoretical framework (Chapter 2), and supplement the findings from this empirical study, several insights can be derived regarding the necessary changes in the BM elements for MSPs.

The literature underscores the importance of differentiating products and services for MSPs. Focus on specialization, such as BPO-centric professional services or automated self-service, is essential. Additionally, MSPs should prioritize risk and cost mitigation for their customers, ensure service accessibility and reliability, embrace cloud-native architectures with diverse application programming interface (API) integrations, and guarantee stable performance through SLAs. Direct, localized sales channels have been identified as crucial for MSPs. Furthermore, leveraging digital marketplaces like IBM, AWS, and Azure can expand reach. The potential introduction of a self-service platform also emerged as a noteworthy consideration. A data-driven approach to client segmentation is advocated and tailored for specific offerings. Both SMBs and larger corporations, when approached with an industry-centric focus, can be effectively targeted. Simplifying the user experience by offering trials and demos can also enhance customer engagement. Direct avenues for sales and technical queries and analyzing consumption patterns for targeted outreach can foster customer loyalty. Furthermore, introducing innovative product suites and bespoke services further strengthens the relationship. Foundational managed services remain at the core of MSP offerings. However, catering to diverse cloud consumption segments, such as IaaS, SaaS, and PaaS, can diversify revenue streams, which is critical for the future BMs of MSPs. New channels through marketplaces, self-service platforms, and premium support plans can further enhance the revenue streams. Specialization in niche domains, complemented by consulting services, can also be profitable. Moreover, resource allocation for software solution maintenance and data center operations is also essential. Additionally, investments in research and development, marketing initiatives, and workforce remuneration are other significant considerations that MSPs should consider. Rapid prototyping with MVP or PoV can be instrumental. Not to be disregarded should be developing and maintaining solutions or services for specific client segments. Equally relevant are sales, marketing, customer support, and hiring and retaining skilled employees to succeed in the future. Using digital platforms, such as marketplaces for end clients,

can further enhance the market position of the MSP. The dynamic shifts in the MSP BM highlight the need for innovation and adaptability. Overall, Table 44 summarizes the key elements and the requisite modifications for a future BM, including the research results herein:

Table 44: Building Blocks for MSP BM

BM Element	Building blocks
Value Proposition	- Differentiation of products and services, emphasizing specialization (e.g., BPO-centric professional services or automated self-service) - Utilizing consultative selling - Risk and cost reduction for clients - Ensuring service accessibility and reliability - Embracing cloud-native architectures with diverse API integrations - Guaranteeing stabile performance through SLAs
Channels	- Prioritizing direct localized sales channel - Leveraging marketplaces (e.g., IBM, AWS, Azure) - Optional: Introducing a self-service platform
Customer Segments	- Data-driven client segmentation tailored for specific offerings, targeting both SMBs and large enterprises with an industry-centric approach
Customer Relationships	- Simplifying the user experience, offering free trials and demos - Establishing direct contact avenues for sales and techncical queries - Analyzing consumption patterns for targeted client outreach - Fostering customer loyalty through innovative product suits and individual services
Revenue Streams	- Offering foundational managed services - Catering to diverse cloud consumption segments (e.g., IaaS, SaaS, and PaaS) - Exploring new revenue streams through marketplaces or self-service platforms - Introducing non-basic, premium support plans - Specializing in niche domains, (e.g., BPO complemented by consulting services)

BM Element	Building blocks
Cost Structure Depending on resources	- Allocating resources for software solutions and data center maintenance - Managing data center operations, support lines and solution provisioning - Investing in research and development, marketing, and workforce remuneration
Key Activities	- Engaging in rapid prototyping for clients (e.g., MVP, and PoV) - Developing and maintaining tailored solutions for specific client segments - Prioritizing sales, marketing and customer support - Attracting and retaining a highly skilled workforce - Harnessing digital platforms, e.g., marketplaces for end clients engagements
Key Partner	- Collaborating with software and infrastructure vendors - Engaging with innovation hubs, accelerators or academic institutions - Cultivating a strong ecosystem to foster synergies
Key Resources	- Prioritizing the recruitment of skilled professionals - Building domain expertise - Incorporating new frameworks (e.g., digital transformation framework, scaled agile framework) - Investing in data centers, hardware, software components and open source technology - Ensuring a solid financial position

Source: Own depiction

5.4 Limitations and Future Lines of Research

It is important to acknowledge the limitations and scope of the research. While this dissertation provided insights into the BM of MSPs in the German-speaking market, it also had limitations. This section highlights the current study's limitations and identifies potential areas for future research. The limitations serve as a reminder that the findings of this empirical study may not be fully generalizable or applicable to all contexts, while the future lines of research suggest areas for further exploration to expand the understanding of the research topic.

The first limitation of the current study is that it focused on the **German-speaking market**, which may not be fully representative of the global market. The findings and conclusions drawn from this study may be limited in their generalizability to other regions or countries due to cultural, economic, and technological differences. This limitation emphasizes the need for caution when interpreting and applying the findings to different contexts.

Another limitation of the dissertation is that the survey included only **seven industries**, which may not fully capture the diversity of industries and their unique characteristics. The findings may not be fully generalizable to other industries not included in the survey, which calls for future research to consider a broader range of industries to obtain a more comprehensive understanding of the research topic.

Additionally, the scope of the research focused on **general IT services** provided by MSPs and did not specifically differentiate MSSPs and other specialized services. This omission could have limited the applicability of the findings to specific types of IT service providers. Therefore, further research could explore the nuances and differences among different service providers. The research may have lacked comprehensive information about pricing and price sensitivity in the context of IT service provider adoption and technology trends. Nonetheless, pricing strategies and customer price sensitivity may be important factors influencing the adoption of IT services. Looking ahead, a promising avenue for further exploration lies in the field of BPO. The current study, while comprehensive, did not delve deeply into the intricate dynamics and strategies of these arrangements. Future research could involve qualitative and quantitative investigations into the impact, challenges, and strategies of **BPO adoption** within the managed services sector. This research could assess BPO's contribution to operational efficiencies, cost management, and overall service quality. In addition, investigating the interplay between BMI and BPO provides a path. Unraveling how they influence the innovation processes of MSPs and shape BMs could yield valuable insights. This research area would show the collaborative dynamics between MSPs, their clients, and BPO service providers, enhancing an understanding of the managed services landscape. With a focused exploration of this specific area and its intersection with BMI, the academic understanding and practical implications within the managed services area can be greatly enriched.

In addition to that, two hypotheses in the research were not supported. The rejection of H3 and H5 may, in part, be attributed to the measurement instruments used in this study. Future research could benefit from more refined and comprehensive measures to **capture the nuances of innovation, security, and consultative selling practices**. Employing qualitative methods such as in-depth interviews or case studies can offer a deeper understanding of the decision-making processes within SMBs and MSPs, focus on the nuances of their strategies. Given the dynamic nature of the technology landscape, future research could highlight how emerging technologies, such as artificial intelligence, and blockchain, impact the strategies and priorities of SMBs and MSPs in terms of innovation and security. Furthermore, as technology needs and client expectations change, understanding the effectiveness of consultative selling becomes crucial. It emphasizes the understanding of unique needs and challenges of each client. Given the diversity of businesses seeking MSP services, research in this area can provide insights into tailoring MSP offerings to meet specific client requirements, ultimately enhancing customer satisfaction, and loyalty. As technology continues to advance and become more complex, clients often rely on MSPs for expertise and guidance. Research into consultative selling can uncover how MSPs can effectively communicate the value of their services, simplifying complex concepts for clients and ensuring they make informed decisions.

Hence, further research could investigate this area in more detail to better understand its impact on the research topic. Furthermore, the study focused on **established organizations and companies** but did not consider start-ups or similar entrepreneurial ventures. The findings may not be fully generalizable to different organizational contexts. Thus, future research could explore the adoption of IT service providers and technology trends in different organizations to obtain a more comprehensive understanding of the research topic. The findings of this study may not be fully transferable to other contexts, so further research is needed to explore the applicability and generalizability of the findings in different settings.

Furthermore, there are two areas to concentrate in the future. Within the MSP domain, the focus should be on exploring the formulation of detailed **implementation plans** for working with MSPs, encompassing elements such as data migration, staff training, vendor performance monitoring, periodic assessments, and the identification of areas for enhancement. Moreover, there is a

need to delve into the effectiveness of change management strategies during MSP adoption, examining how organizations manage the transition process, and handle stakeholder engagement, and resistance. Besides, shifting to MSP **exit strategies**, future research should investigate the presence and efficacy of such strategies in MSP partnerships. This involves assessing how organizations plan for a smooth transition in worst-case scenarios, such as contract termination, or service dissatisfaction. The legal and contractual aspects of MSP exit strategies warrant examination, including the presence of exit clauses, data ownership rights, and intellectual property considerations within MSP agreements. Additionally, researchers should delve into the challenges and best practices associated with data migration during the exit from MSP services, including data security measures, transfer protocols, and compliance requirements during the exit process. This area needs to include the financial implications of exiting MSP contracts, including termination fees, cost-benefit analyses, and the impact on organizational budgets, deserve attention in future research. By addressing these research areas, organizations can enhance their readiness for MSP adoption, effectively navigate challenges during implementation and exit, and ultimately ensure the successful integration of MSP services into their IT ecosystems while mitigating potential risks.

Subsequent academic research should be oriented toward more systematically exploring implementation strategies for innovative BMs within the IT services sector. There is a distinct need for qualitative empirical groundwork aimed at delving into the strategic resources utilized by MSPs to cultivate and solidify their customer relationships. Such endeavors are essential for comprehending the intricate processes of BMI in a sector that relies on suppliers' and customers' collaborative innovation efforts.

6 CONCLUSION AND OUTLOOK

Overall, this chapter offers a comprehensive overview of the research results, supporting the theoretical aspects discussed in the dissertation and providing insights for practitioners and researchers interested in the field of digital innovation. The MSP market has grown significantly in recent years and is projected to continue expanding. The proliferation of technologies such as cloud computing, big data, AI, and the IoT has fueled the demand for managed IT services. This section aims to explore the future trajectory of the MSP sector and its potential evolution in the upcoming years.

The primary objective of this dissertation was to examine the impact of digitalization on the BM of MSPs, including the specific requirements for IT service providers in the near future. Additionally, the aim was to identify and develop a guideline for a new BM that would influence the IT services sector in the German-speaking market. Therefore, the concept of BMI was used.

Four research questions were formulated and explored to achieve this aim. The primary question (RQ1) aimed to uncover the theories, methodologies, and data employed in current academic research concerning BMI in the managed IT services sector. Additionally, it pursued ascertaining the existing classifications documented in contemporary academic research for these two domains. Thus, comprehensive literature research was conducted to achieve this objective, including a systemic literature review of four main components: digitalization and technology trends (Section 2.1), the IT provider sector (Section 2.2), BMI (Section 2.3), and relevant research frameworks (e.g., the dynamic capabilities framework; Penrose, 1959 / 2009; Wernerfelt, 1984) and the business ecosystem model (Section 2.4). The systematic literature review (Section 3.2) was executed following the PRISMA protocol approach (Arksey and O'Malley, 2005), initially identifying 261 studies across chosen databases. Subsequent refinement led to the retention of 23 studies that illuminated theoretical frameworks and technological aspects linked

to BMI. This process also uncovered two distinct business strategies: provider knowledge partnerships and customer partnerships (Pathak et al., 2020, p. 4). In RQ1, the review unveiled a range of pioneering technologies fostering BMI in managed services. These technologies stood out due to their novelty, advanced technological sophistication, and the expertise needed for their development and proficient operation. Notable instances included cloud computing like cloud storage (Levy et al., 2022; Clohessy, 2017), processing services and BDA (Khalife, 2019; Mortati et al., 2023), and augmented reality (Mattila et al., 2018). Nevertheless, to establish an exceptional market position and a competitive advantage (Amit and Zott, 2012, p. 41), providers should strive to evolve into platform providers, seamlessly integrating a comprehensive spectrum of IT services.

Furthermore, this scientific dissertations' conclusion leverages the systematic literature review (Section 3.2) and the theoretical framework explored in Chapter 2 to tackle the second research question. RQ2 in this study targeted the gaps in the current research requiring attention to advance an understanding of BMI within managed services. While most of the studies retrieved delve into technologies facilitating BMI within managed services to a certain extent, the strategies through which MSPs can introduce product innovations into the market have not received significant attention in empirical research thus far. A synthesis of the available discourse suggested that a viable approach to establishing a distinct position in a dynamically evolving market involves a synergistic blend of knowledge partnerships on the development and provision front, coupled with customer partnerships on the demand side (Levy et al., 2022, p. 5 f.).

An empirical study was conducted with a survey questionnaire to address the other two research questions (RQ3 and RQ4). The foundation was built on the literature and study review (Table 16) and interfered as a practical approach. The standardized questionnaire (Mayer, 2013, p. 58) was tailored for quantitative research (Döring and Bortz, 2016, p. 405) and included pre-formulated answers to facilitate linking responses to hypotheses (H1–H5) and research questions RQ3–RQ4. Overall, 359 questionnaires were distributed, with 63 individuals responding during the designated time frame, yielding a response rate of 17.54 %. The target was to achieve a response rate of at least 10 %, which aligned with the realistic

range of 5-40 % suggested by Döring and Bortz (2016, p. 412). In addition, the distribution targeted C-level contacts and IT managers, as their engagement would signify the topic's relevance. Of the 63 participants, each representing a distinct organization, 50 respondents comprised the final dataset after filtering. Notably, 52 % of participants were in C-level positions, 34 % in executive management, and 14 % in first-level management. In RQ3, the focus was on determining the factors playing a crucial role when companies decide to choose an MSP by exploring the key considerations guiding the selection process. Based on the outcomes of the survey questionnaire designed to address the third research question, several noteworthy insights were gathered regarding companies' decisions to engage with MSPs. The survey respondents highlighted the following as their main reasons for outsourcing to MSPs:

- Cost Savings: Many companies choose to work with MSPs to achieve cost savings in their IT operations. Outsourcing specific tasks to MSPs can often be more cost-effective than maintaining an in-house team to handle the same tasks.
- Risk Reduction: Outsourcing IT functions to MSPs can help companies mitigate risks. MSPs often have specialized expertise and resources that can better manage and reduce potential risks associated with technology and data management.
- IT Modernization: Companies decide to work with MSPs to modernize their IT infrastructure and services. MSPs offer access to advanced technologies and innovative solutions that enhance companies' IT capabilities.

According to NTT DATA's report from 2022, organizations have placed a greater emphasis on promoting cost transparency as opposed to simply reducing costs, primarily by adopting “pay-as-you-go” models. Additionally, the study identified speed and acceleration as the second focal point, followed closely by innovation and value generation, highlighting their significance for companies engaging with MSPs (NTT DATA 2022).

Furthermore, this research identified the major fields of action influencing companies' decisions to collaborate with MSPs:

- High Availability: The assurance of continuous and reliable IT services is a critical factor that attracts companies to MSPs. MSPs offer the advantage of maintaining systems and services around the clock, minimizing downtime.
- Transparent Costs: Clear and transparent pricing structures are vital for companies when partnering with MSPs. Having a clear understanding of costs help companies manage their budgets effectively.
- Free Internal Capacity: Companies often turn to MSPs to solve internal resource constraints. By outsourcing certain IT functions, companies can release their internal teams to concentrate on fundamental business operations.

In summary, the survey results highlighted the primary reasons companies in the German-speaking market outsource to MSPs (e.g., cost savings, risk reduction, and IT modernization) and the key factors attracting them to work with MSPs (e.g., high availability, transparent costs, and internal capacity enhancement). These insights provide valuable information for both parties seeking MSP partnerships and for the MSPs themselves to better understand the needs of their clients.

The last research question (RQ4) underscored the imperative for MSPs to continuously refine their service offerings and delivery processes. Potential directions for investigation under RQ4 encompassed the analysis of customer feedback to pinpoint areas requiring enhancement and exploring novel service offerings to augment existing MSP provisions. This research identified several inhibitors hindering the progress of MSPs' service improvements:

- Insufficient Maturity of Affected Business Processes: This inhibitor highlights the need for organizations to mature and optimize their internal processes before effectively partnering with MSPs. A lack of readiness in the existing business processes can impede the seamless integration of MSP services.
- Loss of Know-How: The apprehension regarding the loss of critical knowledge during the outsourcing process underscores the necessity for MSPs to develop strategies that facilitate knowledge transfer and retention, ensuring a smooth transition of operations.

- Increased Coordination Effort: The increased effort required to coordinate between the organization and the MSP, particularly in intricate projects, highlights the importance of well-structured communication channels and collaboration mechanisms.

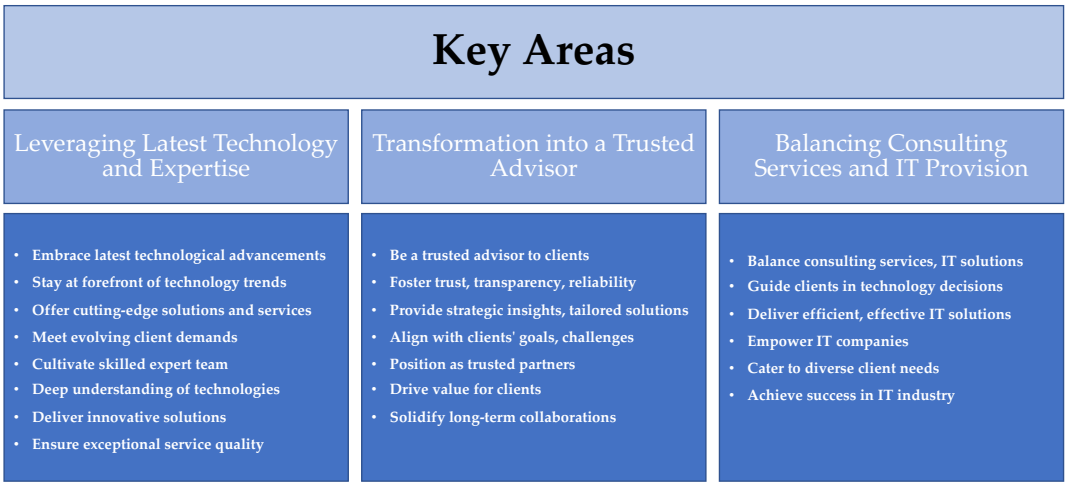
Among these inhibitors, the most prominent were the insufficient maturity of affected business processes and the fear of losing knowledge, corroborating hypothesis 4. This evidence indicated a clear preference among companies for focusing on specific BPO aspects, as stated by Dittrich and Braun (2004, p. 3). IDG Research Services (2020) also highlighted that over 30 % of the companies surveyed often had immature organizational processes, underscoring the imperative for businesses to establish robust and efficient internal processes before considering MSP outsourcing or consulting. According to Beulen et al. (2011, pp. 40-42), outsourcing may encompass a company's information system or entire business processes. In the former case, the service recipient sets performance goals for information services alone while retaining responsibility for the associated business processes. Furthermore, BPO has a more extensive focus, addressing complete business processes in which information systems form a component. The responsibility of the service provider is significantly broader in such cases. These insights collectively emphasize the multifaceted landscape within which MSPs operate, where considerations span technological expertise, strategic insights, and effective integration of services to meet dynamic market needs.

Hypothesis 5 was based on consultative selling and was useful for BPO. According to Poeppelbuss et al. (2022), consultative selling is a critical strategy. This approach revolves around comprehending and addressing customer concerns throughout the sales process, from initial development stages to service utilization (Pathak et al., 2020, p. 4). By adopting this approach, MSPs can collaboratively devise solutions with their clients, considering specific requisites and adapting offerings to meet evolving customer expectations. Furthermore, the participants' feedback underscores the substantial importance of consultative selling in the present and the subsequent five years. As organizations progressively delegate their IT functions, the role of MSPs extends beyond technical expertise to encompass strategic consulting services, assisting clients in attaining competitive

advantages, expediting cycle times, and reducing development costs, per insights from Saitta and Fjermestad (2006, p. 9).

Furthermore, to its broader contributions, this dissertation provided specific insights tailored to IT companies, especially MSPs, guiding them toward strategies for enhancing their competitiveness and achieving success within the industry's dynamic landscape. The investigation underscored three key focus areas essential for IT companies aiming to establish a strong competitive edge and achieve sustained success (illustrated in Figure 41). First was leveraging the latest technology and expertise to remain competitive. IT companies must embrace and integrate the latest technological advancements. Staying at the forefront of technology trends equips them to offer cutting-edge solutions and services that meet evolving client demands. Moreover, cultivating a team of skilled experts who deeply understand these technologies enables companies to deliver innovative solutions and ensure exceptional service quality. In addition, the transformation into a trusted advisor is pivotal. Companies in the IT sector need to foster client relationships built on trust, transparency, and reliability. By providing strategic insights and tailored solutions that align with clients' goals and challenges, MSP companies can position themselves as trusted partners, driving value for their clients and solidifying long-term collaborations. Last was balancing consulting services and IT provision. Achieving success in the IT industry requires a delicate balance between offering consulting services and providing IT solutions. MSPs should adeptly balance their role as advisors who guide clients in making informed technology decisions and as providers who deliver efficient and effective IT solutions. Striking this balance empowers them to deliver comprehensive solutions that address diverse client needs.

Figure 41: Key Areas for MSPs for Future Success



Source: Own depiction

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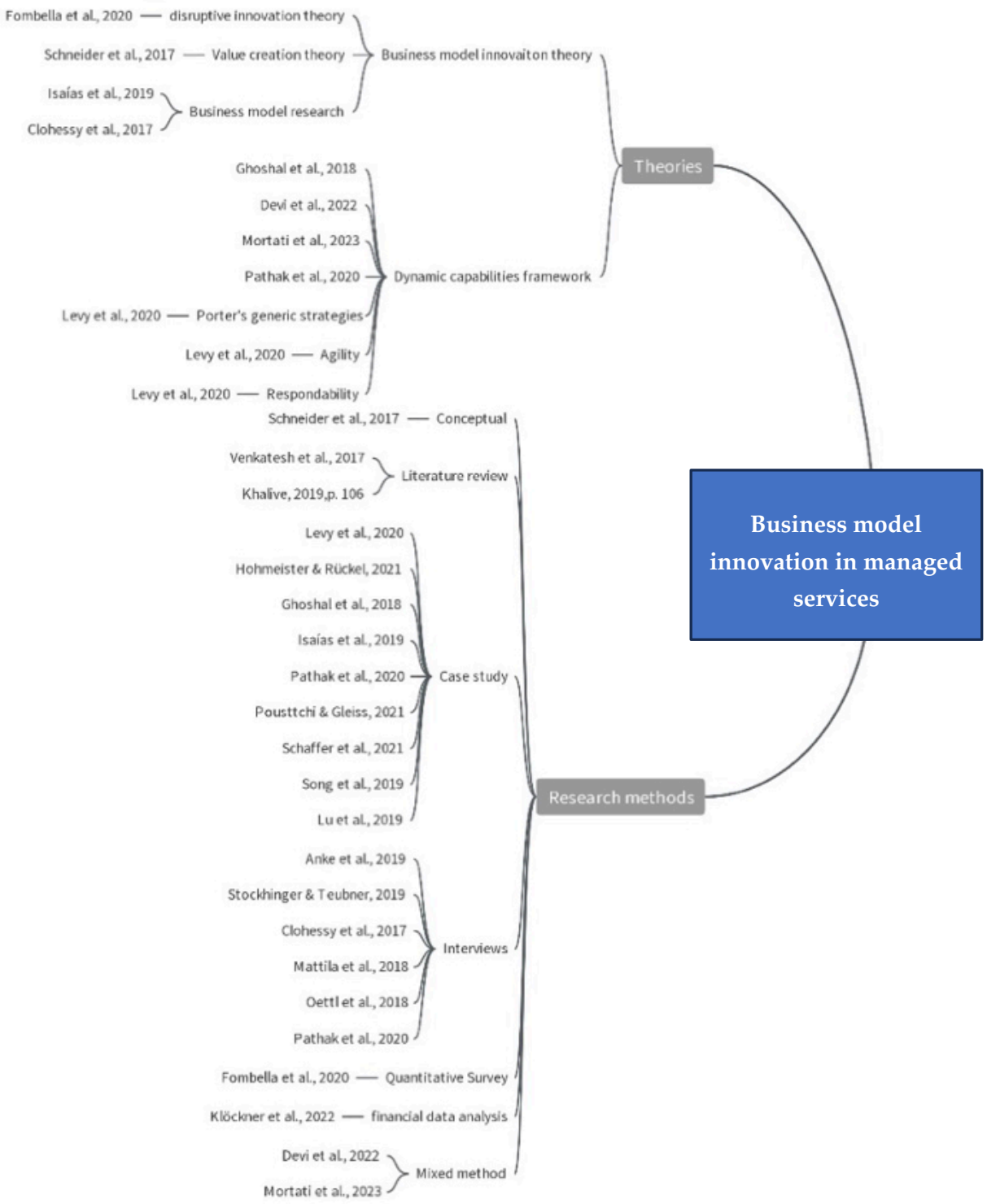
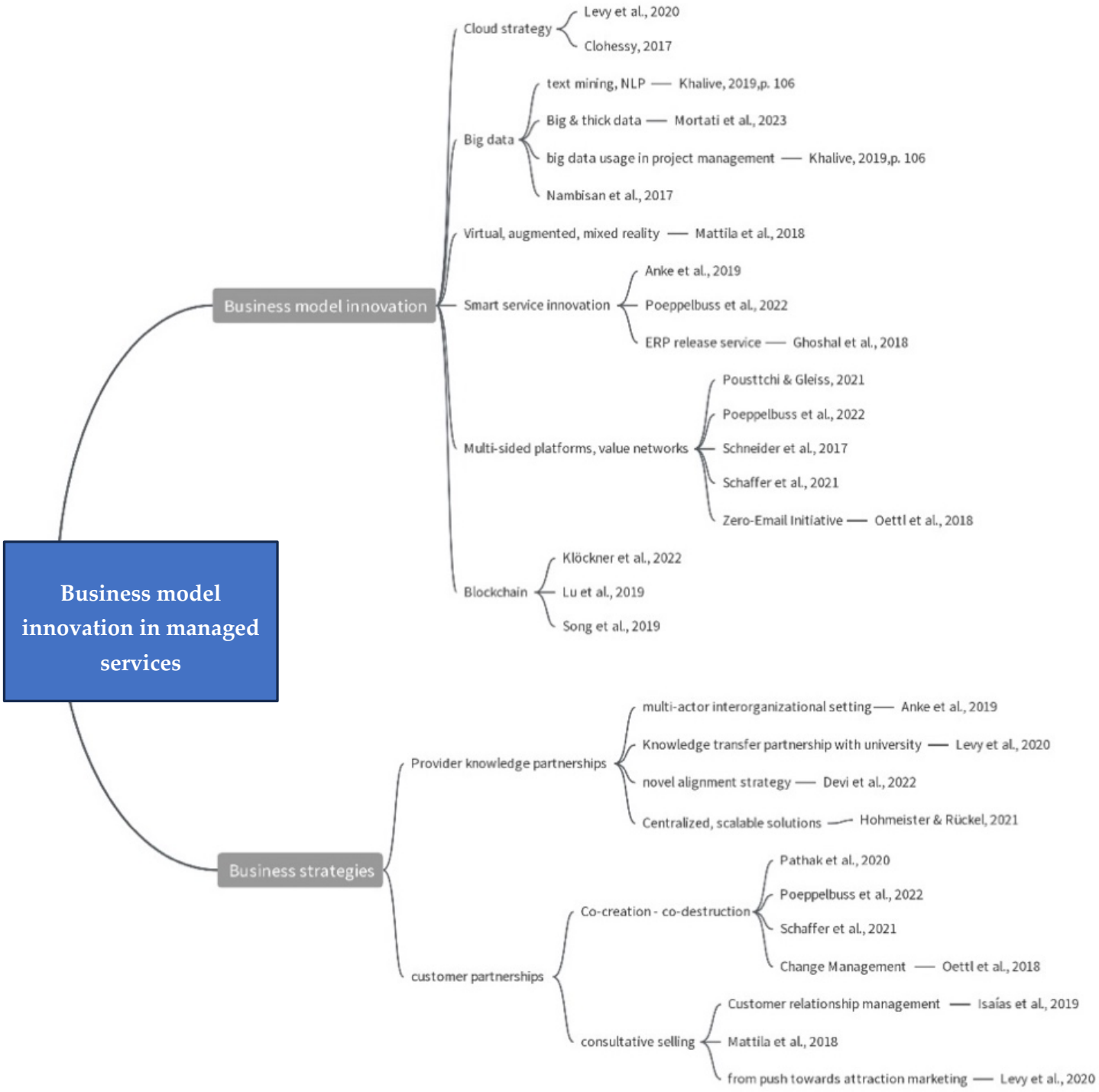
APPENDIX

APPENDIX A: Study Content Map

Part I



Part II


Business model innovation in managed services
Business model innovation
Cloud strategy
Levy et al., 2020
Clohessy, 2017
Big data
text mining, NLP — Khalive, 2019,p. 106
Big & thick data — Mortati et al., 2023
big data usage in project management — Khalive, 2019,p. 106
Nambisan et al., 2017
Virtual, augmented, mixed reality — Mattila et al., 2018
Smart service innovation
Anke et al., 2019
Poeppelbuss et al., 2022
ERP release service — Ghoshal et al., 2018
Multi-sided platforms, value networks
Pousttchi & Gleiss, 2021
Poeppelbuss et al., 2022
Schneider et al., 2017
Schaffer et al., 2021
Zero-Email Initiative — Oettl et al., 2018
Blockchain
Klöckner et al., 2022
Lu et al., 2019
Song et al., 2019
Business strategies
Provider knowledge partnerships
multi-actor interorganizational setting — Anke et al., 2019
Knowledge transfer partnership with university — Levy et al., 2020
novel alignment strategy — Devi et al., 2022
Centralized, scalable solutions — Hohmeister & Rückel, 2021
customer partnerships
Co-creation - co-destruction
Pathak et al., 2020
Poeppelbuss et al., 2022
Schaffer et al., 2021
Change Management — Oettl et al., 2018
consultative selling
Customer relationship management — Isaías et al., 2019
Mattila et al., 2018
from push towards attraction marketing — Levy et al., 2020

APPENDIX B: Survey Questionnaire

UCAM Research Project, Author Stephanie Metzner

Dear Participant,

Thank you very much for your willingness to participate in the survey.
Digitalization is the driving force of economics. For this purpose, collaboration between **Managed Service Provider (MSP)** and incumbent companies is essential. More and more, such collaboration take place with digitalization and relevant business model innovation of MSPs.
Due to changing framework conditions (dynamic markets, globalization, technological progress and digital transformation), IT departments in companies are faced with challenges to react flexibly to new requirements from the business departments. This is the only way to deliver IT value in the long term. Companies often use the diverse range of services offered by managed service providers to meet current requirements.
As part of my research project at UCAM and the University of Applied Sciences for Economics & Management, I would like to find out how MSPs will have to position themselves in the future in order to be successful.
This survey is aimed at **C-level and IT-savvy management levels.**
I would like to extract the factors that make you - as a representative of your firm - willing to share your thoughts and requirements for MSPs. I kindly ask you to complete the following questions, which will require **maximum 13 minutes** of your time. To thank you for your contribution, I will provide you with tangible insights of my research, if you will provide your email address at the end of the survey.

I will store your data anonymously and aggregate all responses to analyze the data. Company, names or mail addresses will neither be collected nor are they necessary for my study.

The aggregated results will be **published** my doctoral thesis as well as in research-oriented journals. Only the **aggregated responses** will be subject to analysis; no reference to single responses will be made. I fully guarantee **anonymity** of your submitted data.

If you have further questions about my study or this questionnaire, or if you wish to lodge a complaint or concern, you may contact me anytime.
Mail: metzner.steph@gmx.de

Please note the following **definitions** are used in the context of the survey:

IT Provider:
Any for profit company which provides aggregated information technology resources to subscribers / clients remotely via the Internet or other networked arrangements.
Focuses on Managed and Cloud Service Provider

Digitalization:
Digitalization is defined as the use of digital technologies and of data in order to create revenue, improve business, replace/transform business processes and create an environment for digital business, whereby digital information is at the core.

Forward

Powered by SurveyMonkey

UCAM Research Project, Author Stephanie Metzner

* 1. Which of the following industries best describes your employer?

- ◯ Public Sector
- ◯ Insurance
- ◯ Industry
- ◯ Consumer Good Products
- ◯ Life Science
- ◯ Communications
- ◯ Other (Please specify)

2. Name of your employer (Optional)

* 3. Which of the following job titles best describes your current occupation?

- ◯ CEO
- ◯ COO
- ◯ CSO
- ◯ CTO
- ◯ CIO
- ◯ IT-Management
- ◯ Other IT employee
- ◯ Non IT-employee

* 4. Which of the following best describes your management level?

- ◯ C-level (top level management)
- ◯ Executive (middle level management)
- ◯ Team leader (first level management)
- ◯ No management tasks

* 5. Please indicate the average annual revenue of your organization.

- ◯ $0-1 billion revenue
- ◯ >$1-10 billion revenue
- ◯ >$10 billion revenue

* 6. Please indicate number of employees of your company.

- ◯ 0-100 employees
- ◯ 101-500 employees
- ◯ 501-1000 employees
- ◯ 1001-5000 employees
- ◯ >=5001 employees

* 7. Please indicate the IT budget of your organization in the year 2023.

- ◯ less than $500.000
- ◯ between $500.001 and $1.000.000
- ◯ between $1.000.001 and $5.000.000
- ◯ > $5.000.000
- ◯ Not applicable

8. How do you estimate the development of your IT budget in 2024 compared to the 2023 IT budget?

- ◯ Decreases (>50%)
- ◯ Decreases (>20%-50%)
- ◯ Decreases (1%-20%)
- ◯ Constant / no change
- ◯ Increases (1%-20%)
- ◯ Increases (>20%-50%)
- ◯ Increases (>50%)

* 9. Which describes best the value of IT within your organization?

- ◯ IT services are fully outsourced
- ◯ We have outsourced the majority of our IT services
- ◯ We have outsourced certain IT services
- ◯ We have not outsourced any IT services, but are evaluating various strategies
- ◯ We are not interested and will not outsource IT services
- ◯ Other (Please specify)

* 10. Please rate the current relevance of IT provider for your business?

- ◯ Very low relevance
- ◯ Low relevance
- ◯ Middle relevance
- ◯ High relevance
- ◯ Very high relevance

* 11. Please rank your goals for using an IT provider?
(from 1 high important to 5 not important)

- Cost savings
- Risk reduction
- IT modernization
- Fulfill market requirements
- Find industry experts

* 12. How relevant are the following reasons for working with an IT provider?

	Very low	Low	Middle	High	Very high
Transparent costs	○	○	○	○	○
Risk sharing	○	○	○	○	○
Cost reduction	○	○	○	○	○
Shorter time-to-market	○	○	○	○	○
Innovation and new business models	○	○	○	○	○
Better support	○	○	○	○	○
Free capacity (internally)	○	○	○	○	○
Not satisfied with own IT department	○	○	○	○	○
High availability	○	○	○	○	○
External industry expertise	○	○	○	○	○

13. How relevant are the following inhibitions for the implementation of IT sourcing?

	Very low	Low	Middle	High	Very high
Dependence on the service provider	◯	◯	◯	◯	◯
Loss of know-how	◯	◯	◯	◯	◯
Resistance in the corporate culture	◯	◯	◯	◯	◯
Legal aspects	◯	◯	◯	◯	◯
Increased coordination effort	◯	◯	◯	◯	◯
Lack of experience	◯	◯	◯	◯	◯
Insufficient maturity of affected business processes	◯	◯	◯	◯	◯
Insufficient financial benefits	◯	◯	◯	◯	◯
Outsourcing is not a strategy	◯	◯	◯	◯	◯
Not enough resources available	◯	◯	◯	◯	◯

* 14. Please rate the relevance of services of a Managed Service Provider?

	Very low	Low	Middle	High	Very high
Standard business software	◯	◯	◯	◯	◯
Mailserver	◯	◯	◯	◯	◯
Application Management	◯	◯	◯	◯	◯
Helpdesk	◯	◯	◯	◯	◯
Data archiving	◯	◯	◯	◯	◯
IT networks	◯	◯	◯	◯	◯
Server Management	◯	◯	◯	◯	◯
IT-Security	◯	◯	◯	◯	◯
Project Management	◯	◯	◯	◯	◯
Virtualization	◯	◯	◯	◯	◯

15. Please rate the relevance of critical factors for selecting an IT sourcing provider?

	Very low	Low	Middle	High	Very high
Financial stability	◯	◯	◯	◯	◯
Industry knowledge/expertise	◯	◯	◯	◯	◯
Individual service offer	◯	◯	◯	◯	◯
Use of the latest technologies	◯	◯	◯	◯	◯
Selection of reference customers	◯	◯	◯	◯	◯
Certifications (ISO etc.)	◯	◯	◯	◯	◯
Language	◯	◯	◯	◯	◯
Local presence/site	◯	◯	◯	◯	◯
Standardized products	◯	◯	◯	◯	◯
Existing business relationship	◯	◯	◯	◯	◯

* 16. How relevant is digitalization for your business?

◯ Very low

◯ Low

◯ Middle

◯ High

◯ Very high

* 17. Please rank the current relevance of the following technologies:
(Please rank from 1 high important to 6 not important.)

≡ Cloud computing

≡ Artificial Intelligence

≡ Big data analytics

≡ Internet of things (IoT)

≡ Blockchain

≡ Quantum computing

* 18. Please rank the relevance of the following technologies by 2028:
(from 1 high important to 6 not important)

- Cloud computing
- Artificial Intelligence
- Big data analytics
- Internet of things (IoT)
- Blockchain
- Quantum computing

* 19. Do you agree with the following statements:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
"Managed services without included consulting services are no longer be of interest to companies today."	○	○	○	○	○
"Managed services without included consulting services will no longer be of interest to companies in the next five years."	○	○	○	○	○
"IT provider are driving innovation for my business today."	○	○	○	○	○
"IT provider are driving innovation for my business in the next five years."	○	○	○	○	○

* 20. Please rate the relevance of investing in new technologies in Germany?

	Very low	Low	Middle	High	Very high
Competitive advantage	◯	◯	◯	◯	◯
Cost savings	◯	◯	◯	◯	◯
Risk reduction	◯	◯	◯	◯	◯
Market requirements	◯	◯	◯	◯	◯

21. **THANK YOU SO MUCH FOR PARTICIPATING.**
If you wish to receive the results of my study, please leave your email address here: