Innovating the Invisible and Intangible - Value Creation in B2B Service

Struwe, Sascha

DOI (link to publication from Publisher):
10.54337/aau510565695

Publication date:
2022

Document Version
Publisher's PDF, also known as Version of record

INNOVATING THE INVISIBLE AND INTANGIBLE

VALUE CREATION IN B2B-SERVICE

BY
SASCHA STRUWE

DISSERTATION SUBMITTED 2022

AALBORG UNIVERSITY
DENMARK

INNOVATING THE INVISIBLE AND INTANGIBLE

VALUE CREATION IN B2B-SERVICE

by

Sascha Struwe

AALBORG UNIVERSITY
DENMARK

Dissertation submitted March 2022

Dissertation submitted: March 2022

PhD supervisor: Associate Prof. Dmitrij Slepniov,
Aalborg University Business School

Co-PhD supervisor: Prof. Zhao Hong,
University of Chinese Academy of Sciences

PhD committee: Professor Marin Marinov
Aalborg University (chair)

Associate Professor Stine Haakonsson
Copenhagen Business School (CBS)

Professor Jonas Gabrielsson
Högskolan i Halmstad

PhD Series: The Doctoral School of Social Sciences
and Humanities, Aalborg University

ISSN (online): 2794-2694
ISBN (online): 978-87-7573-930-1

Published by:
Aalborg University Press
Kroghstræde 3
DK – 9220 Aalborg Ø
Phone: +45 99407140
aauf@forlag.aau.dk
forlag.aau.dk

Printed in Denmark by Rosendahls, 2022

ENGLISH SUMMARY

This thesis explores how value creation in B2B service innovation unfolds. It investigates the dynamics and challenges service-innovating actors in B2B settings face and how they manage the value creation process. For this purpose, the thesis positions itself in the service sciences and the service innovation literature, using service-dominant logic (SDL) as its foundational theoretical lens.

The motivation for this thesis and its research question is the identified inability of the service innovation literature to explain how B2B service innovation can be achieved. This matters because while services have become the key pillar of economic development and firm competitiveness, most service innovation attempts remain unsuccessful and forfeit the chance to create value for firms, customers, and society. Moreover, service innovation is an international phenomenon that crosses national boundaries and cultures. Actors engaging in these complex environments often find themselves with limited advice for co-creation and effectively managing tensions and conflicts. Additionally, service innovation is not limited to pure service firms but is increasingly seen as an opportunity by industrial firms. Following this trend and due to the proliferation of technologies, digital servitization has become a way to remain competitive, but what conceptualizes the necessary capabilities to successfully create value within this journey remains insignificantly understood. Lastly, value creation in B2B service innovation does not happen in a vacuum but in emerging service ecosystems of interrelated actors. However, a holistic understanding of the value creation process matching the systemic nature of actor interactions is mostly unexplored.

The thesis employs a systematic literature review and a set of single and multiple case studies to address these gaps. The first article explores the underlying concepts of value creation in B2B service innovation. The study provides a synthesis of these concepts and finds that the literature is characterized by a fragmented and incohesive knowledge body. The second article conducts a longitudinal single case study following a German creative agency's relationship with its German client in China, examining their relationship breakdown. It concludes that failing to identify actor institutions of value assessment and adjusting service interfaces and infrastructure accordingly can lead to relationship termination. The third article conducts a multiple case study of firms successfully engaging in digital servitization developing digital service platforms. The study conceptualizes a set of four capabilities (i.e. digital literacy, aligning, reflecting, and coping) necessary for value co-creation (VCC) and value co-production. Finally, the fourth article explores value creation in emerging open banking service ecosystems, conducting a multiple case study of three leading retail banks from the United States, Canada, and Scandinavia. It finds that value creation is a contextually embedded process that entails an interplay between VCC and value co-destruction (VCD), facilitating a dialectic process.

Based on theoretical and empirical findings, this thesis enhances our understanding of value creation in B2B service innovation and makes various contributions. Its literature review provides insights into the characteristics of the literature stream, a systematic account of the underlying value creation concepts, and future avenues for research in B2B service innovation. Furthermore, the thesis conceptualizes value creation in B2B service innovation as a complicated multi-actor process, subject to an ongoing interplay of VCC and VCD, affecting actor value states resulting from the subjective experience of VCC and VCD. Moreover, it highlights the influence of institutions and context on value assessment and the role of mechanisms for satisfactory outcomes. The thesis also emphasizes the criticality of appropriate capabilities as facilitators of mechanisms and VCC. In a broader sense, the thesis contributes to an improved understanding of service and service innovation, reducing its intangibility by providing insights into diverse empirical contexts and offering a theoretical explanation.

Keywords: Value Creation, Value Co-creation, Value Co-destruction, Business-to-Business, Service Innovation, Service-Dominant Logic, Capabilities, Mechanisms

DANSK RESUME

Denne afhandling undersøger, hvordan værdiskabelse i B2B-serviceinnovation udspiller sig. Den udforsker dynamikken og udfordringerne, som serviceinnovative aktører i B2B-miljøer står over for, og hvordan de styrer værdiskabelsesprocessen. Til dette formål positionerer afhandlingen sig i servicevidenskab og serviceinnovationslitteratur ved at bruge den servicedominante logik som sin grundlæggende teoretiske linse.

Motivationen for denne afhandling og dens forskningsspørgsmål er baseret på serviceinnovationslitteraturens manglende evne til at forklare, hvordan B2B serviceinnovation kan opnås. Dette er vigtigt, fordi tjenesteydelser er blevet den vigtigste søjle i økonomisk udvikling og virksomheds konkurrenceevne. Alligevel er de fleste serviceinnovationsforsøg mislykkede, og de mister chancen for at skabe værdi for virksomheder, kunder og samfundet. Ydermere er serviceinnovation et internationalt fænomen, der krydser nationale grænser og kulturer. Aktører, der engagerer sig i disse komplekse miljøer, har ofte begrænsede råd til samskabelse og effektiv håndtering af spændinger og konflikter. Desuden er serviceinnovation ikke begrænset til rene servicevirksomheder, men ses i stigende grad som en mulighed for industrivirksomheder. Efter denne tendens og på grund af udbredelsen af teknologier er digital servitisering blevet en måde at forblive konkurrencedygtig på. Alligevel er der manglende forståelse af, hvad der konstituerer de nødvendige evner til at skabe værdi succesfuldt inden for denne rejse. Endelig sker værdiskabelse i B2B-serviceinnovation ikke i et vakuum, men i nye serviceøkosystemer af indbyrdes forbundne aktører. Imidlertid er en holistisk forståelse af værdiskabelsesprocessen, der matcher den systemiske karakter af aktørinteraktioner, for det meste uudforsket.

Afhandlingen anvender en systematisk litteraturgennemgang og et sæt enkelt- og multiple casestudier for at løse disse huller. Den første artikel udforsker de underliggende koncepter for værdiskabelse i B2B-serviceinnovation. Studiet giver en syntese af disse begreber og finder, at litteraturen er præget af et fragmenteret og usammenhængende vidensområde. Den anden artikel udfører et longitudinelt enkelt casestudie af et tysk kreativt bureaus forhold til dets tyske klient i Kina, og undersøger deres forholdssammenbrud. Den konkluderer, at manglende identificering af aktørinstitutioner for værdivurdering og justering af serviceinterface og infrastruktur i overensstemmelse hermed kan føre til opsigelse af forholdet. Den tredje artikel udfører et multipelt casestudie af virksomheder, der med succes engagerer sig i digital servitisering ved at udvikle digitale serviceplatforme. Undersøgelsen konceptualiserer et sæt af fire kapaciteter (digital læsefærdighed, tilpasning, reflektering og mestring), der er nødvendige for værdisamskabelse og værdisamproduktion. Endelig udforsker den fjerde artikel værdiskabelse i nye åbne økosystemer for banktjenester og udfører et multipelt casestudie af tre førende detailbanker fra USA, Canada og Skandinavien.

Den finder, at værdiskabelse er en kontekstuelt indlejret proces, der indebærer et samspil mellem værdisamskabelse og værdisamdestruktion, hvilket letter en dialektisk proces.

Baseret på dens teoretiske og empiriske resultater øger afhandlingen vores forståelse af værdiskabelse i B2B-serviceinnovation og giver forskellige bidrag. Dens litteraturgennemgang giver indsigt i litteraturstrømmens karakteristika, en systematisk redegørelse for de underliggende værdiskabelseskoncepter og fremtidige veje til forskning i B2B-serviceinnovation. Ydermere konceptualiserer afhandlingen værdiskabelse i B2B-serviceinnovation som en kompliceret proces med flere aktører, underlagt et løbende samspil mellem værdisamskabelse og værdisamdestruktion. Denne proces påvirker aktørers værditilstande som følge af den subjektive oplevelse af værdisamskabelse og værdisamdestruktion. Desuden fremhæver den indflydelsen af institutioner og kontekst for værdivurdering og rollen af mekanismer for tilfredsstillende resultater. Afhandlingen understreger også vigtigheden af passende kapaciteter som facilitatorer af mekanismerne og værdisamskabelse. I en bredere forstand bidrager afhandlingen til en forbedret forståelse af service- og serviceinnovation, reducerer dens uhåndgribelighed ved at give indsigt i de forskellige empiriske sammenhænge og tilbyde teoretiske forklaringer.

ACKNOWLEDGEMENTS

If it wasn't for the people who engaged with me throughout my PhD, I wouldn't be writing these lines today. Completing a PhD is not a simple thing in many regards. A PhD is emotionally, psychologically, and even physically challenging if you consider the long hours starring at your screen. I feel honoured that I have met these people and that I can write these words to express my gratitude to everyone involved in this journey.

First of all, I want to thank Dmitrij Slepniov for encouraging me to think outside the box and sparking my interest in research while being a master's student at the Sino-Danish Center in Beijing. Thank you for being a wonderful companion and primary supervisor during my PhD studies. I appreciate your trust in my abilities and giving me the freedom to explore what truly interests and characterizes me as a researcher. Without your sharp mind and talent to motivate me, this thesis might have taken a different turn. In addition, I would like to express my gratitude to my secondary supervisor, Zhao Hong, for being an invaluable source of advice and support during my stay in China.

What would I have been without the support of my family? For sure, a lot less capable. I want to thank my parents, Sabina Struwe and Mathias Struwe, for being there for me whenever I needed them. No effort or costs were too much for them to help me along my way. This expression of gratitude is not limited to the time of my PhD but extends to the entirety of my life. My mother is the most loving person a son could have ever asked for, and my father has always encouraged me to go out and explore and taught me to think for myself. My partner, Eun Kyung Park, has been my emotional stronghold throughout my PhD programme. It was her love and care that energized me, it was her thoughts that inspired me, and it was her smile that enchanted me. I am forever grateful that I have found someone like her worth fighting for.

I believe family shouldn't be defined by biological ties only but also by the strength and intimacy of a relationship. I may have been born an only child, but I genuinely do not feel like one. I have three friends that I am utterly grateful to call my brothers. Thank you for being on my side: Alexander Pokorny, Christoffer Roubal, and Jenko Harrendorf.

I knew little about what it meant to be a PhD student at the beginning of this journey, but I did know that I would be surrounded by intellectual capacities. They all had a profound impact on my development. In particular, I want to thank Svetla T. Marinova for being a mindful mentor and sharing her ideas. Thank you, Romeo V. Turcan, for introducing me to the power of grounded theory and sharing your animating spirit. Thank you, Mohammad B. Rana, for our rich conversations and for challenging my thoughts. Let's not forget Agnieszka U. Nowinska, Andreea Bujac, Daniel Hain,

Daojuan Wang, Jens Holmgren, Jonas Eduardsen, Marin A. Marinov, and Yimei Hu. Moreover, I want to thank Michael Kristian Simonsen and Valeria Guileva for helping me navigate the intricacies of university system.

Sometimes, the distinction between colleagues and friends is difficult to draw. One of these people who deserves special appreciation is Roman Jurowetzki. Thank you for being an essential part of this journey from day one. Then, there are generations of PhD candidates with whom I was fortunate to share offices, discuss my thoughts, share my frustrations, or have a joke. Perhaps this community can most closely relate to what it means to be a PhD student. Thank you, Alexandra E. Cast, Annesofie Lindskov, Cristian Ziliberberg, David Schulzmann, David F. Guerrero, Eskil Olav Andersen, Gao Chang, Gerwin Evers, Ivan Nechaev, Louis G. T. Lines, Marija Rakas, Olga Pojiltov, Primoz Konda, Saurav Kumar, Sebastian Sørensen, and Yang Peipei.

Furthermore, I want to express my utmost gratitude to all the interviewees who contributed to this thesis with their knowledge and insights. You are the backbone of this project; otherwise, it wouldn't have been possible. Last but not least, I want to thank the institutions that funded and provided the platform for this dissertation. To me, the Sino-Danish Center is more than just a productive research environment but a bridge for connecting across cultures. Equally important was the Aalborg University Business School, which I called my intellectual home throughout this PhD programme. Thank you for welcoming and believing in me.

Sascha Struwe

Aalborg, March 2022

DEDICATION

Für meinen Großvater Egon Struwe.

TABLE OF CONTENTS

Chapter 1. Introduction **1**
1.1. Background 1
1.2. Motivation and Gaps 3
1.3. Research Objectives and Questions 5
1.4. Overview of Articles 6
1.5. Structure of the Dissertation 7
Chapter 2. Empirical Context **8**
2.1. Business-to-Business Relationships 8
2.2. Foreign and Local Value Creation for Domestic and International Demands 10
2.3. Digital Servitisation 10
2.4. Emerging Digital Service Ecosystems 11
Chapter 3. Theoretical and Conceptual Framework **13**
3.1. Theorising in Service Innovation 13
3.1.1. Perspective on Service Innovation 13
3.1.2. Theoretical Framework of Service Innovation 14
3.2. Conceptual Framework 16
Chapter 4. Methodology **18**
4.1. Philosophy of Science 18
4.2. Research Design 18
4.2.1. Approach to Theory Development 18
4.2.2. Case Study Design 19
4.3. Data Selection 20
4.4. Data Collection 21
4.4.1. Interviews 21
4.4.2. Observation Notes 23
4.4.3. Archival Records and Documents 23
4.5. Data Analysis 24
Chapter 5. Summary of the Articles **28**
5.1. Article 1 28

5.2. Article 2 29
5.3. Article 3 30
5.4. Article 4 32
References (Chapters 1-5) 34
Chapter 6. B2B service innovation and what we know about it: A systematic literature review 47
6.1. Introduction 48
6.2. Methodology 49
6.2.1. Locate Relevant Studies 50
6.2.2. Literature Selection and Evaluation 51
6.2.3. Approach to Literature Analysis and Synthesis 52
6.3. Analysis 53
6.3.1. Descriptive Analysis 54
6.3.2. State of the Art—B2B-SI 58
6.4. Discussion and Research Agenda 66
6.4.1. Descriptive Insights 66
6.4.2. Qualitative Insights 70
6.5. Conclusion 75
References 76
Chapter 7. Conflict by Design and Why Institutions Matter in Service Design: A Case of a German Creative Agency in China 85
7.1. Introduction 86
7.2. Theoretical Background 87
7.2.1. Service-Dominant Logic 87
7.2.2. Institutions 88
7.2.3. Service Design 89
7.2.4. The Dark Side of Business-to-Business Relationships 90
7.2.5. Lack of Research in B2B Service Design 92
7.3. Methodology and Case Study 93
7.3.1. Research Design 93
7.3.2. Data collection 94
7.3.3. Data analysis 96

7.3.4. Case Description 97
7.4. Results and Analyses 99
7.4.1. Service Design Process 99
7.4.2. Service Design Object 100
7.4.3. Dark Side 103
7.5. Discussion 107
7.6. Conclusion 109
7.6.1. Main Findings and Contributions 109
7.6.2. Limitations and Future Research 112
References 113
Chapter 8. Unlocking Digital Servitization: A Conceptualization of Value Co-creation Capabilities 120
8.1. Introduction 121
8.2. Theoretical Background 122
8.2.1. Digital Servitization 122
8.2.2. Value Co-creation Capabilities in Digital Servitization 123
8.3. Methodology 127
8.3.1. Research Design 127
8.3.2. Data Selection 127
8.3.3. Data Collection 129
8.3.4. Data Analysis 130
8.4. Analysis and Results 131
8.4.1. Capabilities Conceptualization 131
8.5. Discussion 137
8.6. Conclusion 141
8.6.1. Main Findings and Theoretical Implications 141
8.6.2. Managerial Implications 142
8.6.3. Limitations and Future Research 142
References 143
Chapter 9. The Dark Side of Service Ecosystems: Value Co-destruction in the Value Process of Open Banking 149
9.1. Introduction 150

9.2. Theoretical Background 151
9.2.1. Value Co-destruction in Service Eco-Systems 151
9.3. Methodology 154
9.3.1. Research Approach 154
9.3.2. Data Selection and Collection 154
9.3.3. Data Analysis 155
9.4. Empirical Context 155
9.5. Analysis 157
9.5.1. Case Description 158
9.5.2. Value Co-destruction in OB 162
9.6. Discussion 169
9.6.1. Institutional Maturity, Universal, and Specific Manifestations of VCD 169
9.6.2. Value State and Equilibrium 171
9.6.3. Co-existence of VCC and VCD and Their Interplay 173
9.6.4. Nature of Service Ecosystems—Loosely Coupled Systems and Self-Adjusting Actors 174
9.6.5. Formats of Resource Integration Interactions Among Service Eco-System Actors 176
9.7. Conclusion 177
9.7.1. Managerial Implications 178
9.7.2. Limitations and Future Research 179
References 180
Chapter 10. Conclusion 184
10.1. Key Findings and theoretical Contributions 184
10.2. Managerial Implications 190
10.3. Limitations and future Research 191
10.3.1. Reflections on Methodology 191
10.3.2. Reflections on Theory 192
10.4. Epilogue 193
References 194
Appendices ..... Error! Bookmark not defined.

LIST OF TABLES

Table 1: Thesis Research Questions 5
Table 2: Overview of the Thesis Research Articles 6
Table 3: Differences Between B2B and B2C and B2B–SI and B2C-SI 9
Table 4: Service-Dominant Logic Axioms (Vargo & Lusch, 2016) 14
Table 5: Overview of Article Cases 20
Table 6: Overview of Thesis Data 21
Table 7: Overview of Article Analysis Approaches 24
Table 8: Overview of the Search Approach and Its Results 50
Table 9: Theoretical and Conceptual Background of the Dataset 57
Table 10: Overview State of the Art B2B-SI Literature 58
Table 11: Main research gaps and future research avenues - Descriptive analysis 70
Table 12: Main research gaps and future research avenues - Qualitative analysis 74
Table 13. Interview Data 95
Table 14. Overview of Other Data Sources 96
Table 15. Dark-Side Relational Construct Developments 104
Table 16: Overview of Previous Research on Value Co-creation Capabilities in Digital Servitization 125
Table 17: Overview Case Description 128
Table 18: Overview of Data Collection 130
Table 19. Data Overview 155
Table 20. Value Co-destruction as Resource Misintegration Manifestations 168
Table 21. Examples of Value Co-Creation Manifestations 171

LIST OF FIGURES

Figure 1: Conceptual Framework 17
Figure 2: Empirical Article Contexts 20
Figure 3: PRISMA Diagram Systematic Literature Review 52
Figure 4: Annual Scientific Production 54
Figure 5: Top 10 Most Relevant Sources 54
Figure 6: Source Dynamics 55
Figure 7. Analytical Framework of the Study 93
Figure 8. Embedded Units of the Case Study in Context 94
Figure 9. Research Design and Data Treatment 97
Figure 10. Relationship Timeline 107
Figure 11. Relationship Termination Framework 109
Figure 12: Characteristics of Value Co-creation Interactions in Digital Servitization Based on the Literature 127
Figure 13: Data Structure and Coding Process—Value Co-creation Capabilities in Digital Servitization Capabilities 132
Figure 14: Emerging Service Ecosystems and Value Co-creation Capabilities in Digital Servitization 137
Figure 15: Framework for Value Co-creation Capabilities in Digital Servitization 139
Figure 16. The Transformation of Value Process Dynamics in OB 156
Figure 17. Cases of New Business Models and Organisational Power Boundaries 172
Figure 18: Overview of Value State and Equilibrium 173
Figure 19: Dialectic Value Process Framework 177
Figure 20: Complex and Systemic Nature of Value Creation and Value Assessment 185
Figure 21: Value Creation as an Interplay between VCC and VCD 186
Figure 22: Value State as the Result of the Interplay Between VCC and VCD Over Time 186
Figure 23: Value Creation in B2B Service Innovation 189

CHAPTER 1. INTRODUCTION

1.1. BACKGROUND

"Something which can be bought and sold but which you cannot drop on your foot." (Gummesson, 1987)

Services have become the fundamental pillar of modern societies, accounting for 65% of the OECD economy's gross domestic product (GDP) (World Bank, 2022). This development has given rise to the service economy, representing a move from agriculture and manufacturing to service-driven growth. Looking at today's top 10 of the world's most valuable companies by market capitalisation further underpins the criticality of services for economies. Seven out of ten firms are service firms, with Apple, Microsoft, and Alphabet being the top three (CompaniesMarketCap, 2022). Additionally, developing economies have taken notice, redirecting their attention and favouring services over manufacturing to catch up (Indermit, 2021).

Naturally, innovation in services or service innovation has become an economic engine and avenue for firm value creation and competitive advantage (Feng et al., 2020; Ostrom et al., 2015; Vargo & Lusch, 2004). However, innovation research has traditionally focused on product innovation, emphasising manufacturing (Biemans et al., 2016; Witell et al., 2016). Acknowledging the increasing importance of services, scholars and practitioners have tried to apply existing theories, such as the famous stage-gate model (Cooper, 1990), to service innovation and quickly realised its limitations. This approach neglected the fact that services are typically characterised by heterogeneity, perishability, simultaneity between production and consumption, increased actor interactivity, and intangibility, complicating the application of product innovation theory and models (Sampson, 2007; Sampson & Spring, 2012). Consequently, research has embraced this opportunity, leading to the emergence of service sciences (Miles, 1993; Spohrer & Maglio, 2008).

The revised understanding of how value is created and defined is at the core of service science and service innovation research. Historically, theory and practice have taken a rather firm-centric perspective, assuming that the production of goods and their delivery creates value and that hence value is exchanged and embedded within goods. In contrast, contemporary views follow the notion of service-dominant logic, which suggests that firms can only offer value propositions (i.e. resources) that enable beneficiaries (e.g. customers) to fulfil their needs. Hence, value is co-created by integrating resources and determined through the utility experienced, facilitating getting a job done (e.g. solving a problem) (Agarwal & Selen, 2011; Gummesson & Mele, 2010; Stickdorn et al., 2018; Vargo et al., 2008).

However, the reinterpretation of value creation in service innovation also poses complexities and challenges. Recent understanding has emphasised considering service design and attributes from a customer perspective to avoid poor results that do not provide value in use and context (Vargo et al., 2008). Suppose a firm innovates an audio guide that helps a mechanic repair a broken machine. Although this may sound like a wonderful idea, the reality of a loud machine plant may prove it unsuitable. Instead, a virtual reality–based smartphone application could have provided better utility. This example also highlights the benefits (e.g. enhanced knowledge sharing and learning) that can be derived from value co-creation, that is, the integration of relevant actors, such as the customer, into the service innovation process (Lusch et al., 2010; Prahalad & Ramaswamy, 2004). However, engaging in value co-creation can be a complicated undertaking. Co-creation diverges from linear interpretations of value chains (Porter, 1998), emphasising open environments consisting of networks or systems of value-creating actors engaging within an interactive and iterative innovation process (Chesbrough, 2006, 2011; Vargo et al., 2008). Moreover, it implies a role change; for instance, customers become active participants in creating value, and focal service providers become value facilitators for customer value creation (Edvardsson et al., 2010, 2011; Moeller, 2008). These shifts may cause tensions, conflicts, or destruction between the actors involved; for example, different interpretations of value creation roles, ways, and practices exist (Edvardsson et al., 2014; Koskela-Huotari et al., 2016; Mustak & Plé, 2020). Therefore, actors must balance organisational viability, customer desirability, and technological feasibility (Brown, 2008; Brown & Martin, 2015).

Servitisation, the transformation of manufacturing towards service-driven business models, is another example that highlights the intricacy of service innovation (Baines et al., 2009; Raddats et al., 2019). More specifically, it exemplifies increasingly blurry boundaries between product and service value propositions. Servitised firms tend to offer so-called product–service systems (PSS) in which products become the distribution mechanisms for service. Take the Apple iPhone or Amazon Kindle; both are examples of PSS. The iPhone enables users to use apps, listen to music, or capture important memories. Similarly, the Kindle is a platform for selling and reading content.

These examples also show that technology or digitalisation plays a more critical role in enabling service innovation. For example, technology can contribute to more connected systems, facilitating new and existing relationships and exchange (Nambisan et al., 2017; Parida et al., 2019). Although this provides the potential for value creation, it also emphasises the need to carefully orchestrate resource exchange within emerging and interrelated systems (Barrett et al., 2015; Lusch & Nambisan, 2015). In addition, these efforts must consider issues such as actor structural flexibility and integrity (Lusch & Nambisan, 2015).

In conclusion, economies and innovation have come a long way, and services are the centrepiece. However, achieving successful service innovation is not a simple undertaking, and it is more than providing an *"elevated service offering"* (Agarwal & Selen, 2011). Service innovation is a multidimensional and complex process that offers *"a new service experience or service solution that consists of one or several of the following dimensions: new service concept, new customer interactions, new value system/business partners, new revenue model, new organizational or technological delivery system."* (den Hertog et al., 2010)

1.2. MOTIVATION AND GAPS

Why does all this matter? Let me start from a personal point of view. Before starting my PhD, I interned at two leading B2B service firms: KPMG (Consulting) and Serviceplan (Marketing). Despite their ability to innovate repeatedly, no one could truly explain to me how it was done. All I learned is that it just happens. Where was the design thinking or agile project management that everyone talked about at the time? So the answer must have been: you just try and eventually you get lucky?

Disillusioned from these experiences, I became increasingly interested in innovation management, which I ended up studying. It turned out that scholars were asking the same questions and studies provided few answers, particularly with regard to service innovation and value creation (Biemans et al., 2016; Gustafsson et al., 2020; Ostrom et al., 2010, 2015, 2021; Storey et al., 2016).

Against this backdrop, this thesis aims to provide an enhanced understanding of how service innovation can be successfully achieved. The thesis does this by exploring how value creation unfolds in different B2B–service innovation contexts, which have been identified based on their contemporary (see Chapter 2) and theoretical importance (see Section 6.4.2.3).

Gap 1: Article 2 – State-of-the-art B2B–service innovation research

Overall, there is a limited understanding of B2B–service innovation and value creation in service sciences. So far, service sciences have been mostly concerned with B2C–related issues, neglecting the role of B2B relationships in the economy and their differences in terms of service innovation (Baines et al., 2009; Goffin et al., 2021; Lilien, 2016; Mora Cortez & Johnston, 2017; Wiersema, 2013). Therefore, a state-of-the-art analysis of the literature exploring B2B–service innovation's underlying concepts is warranted.

Gap 2: Article 2 – International B2B value co-creation in service design

Although trade wars, technologies, and changing consumer behaviour have reshaped international trade and slowed globalisation, many firms still embrace the

opportunities of global markets and internationalisation. However, given these dynamics, it has become ever more critical to value–co-create efficiently and effectively within international contexts. Unfortunately, service innovation research has primarily taken a Western perspective and empirical contexts, limiting the ability to explain service innovation more holistically, including the influence of institutions (Koskela-Huotari et al., 2016; Macaulay et al., 2012; Ostrom et al., 2015). Moreover, service design, a stream of the service innovation literature that focuses on the practical application of service innovation, has also only been applied to a limited degree within international contexts despite its ability to innovate services in culturally diverse and complicated contexts (Patrício et al., 2018; Stickdorn et al., 2018; Yu & Sangiorgi, 2018). Finally, little is known about the dynamics and challenges (tensions and conflicts) that value-co-creating actors in international contexts face when engaging in service design (Aarikka-Stenroos & Jaakkola, 2012; Nardelli, 2017).

Gap 3: Article 3 – Digital servitisation and platform-based value co-creation

Servitisation is an increasingly important phenomenon undertaken primarily by industrial firms to remain competitive within the service economy. This process happens increasingly in its digital form, digital servitisation, emphasising technologies to transform important pillars of firm business models, such as value positions (Ardolino et al., 2018; Cimini et al., 2021; Slepniov et al., 2014). Digital platforms have gained popularity, as the notion of the platform economy exemplifies (Cenamor et al., 2017; Cutolo et al., 2021). What remains unclear is what conceptualises capabilities (Annarelli et al., 2021) and facilitates digital servitisation, particularly with regard to value co-creation capabilities for digital platform development (Lenka et al., 2017; Paschou et al., 2020).

Gap 4: Article 4 – Value creation within emerging service ecosystems

As services evolve, service ecosystems evolve. Emerging service ecosystems and their interrelated actors are of great interest to value co-creation research. Previous studies have mostly taken a positive view of the outcomes of interactions, overlooking value co-destruction manifestations. A multidimensional perspective, including value co-creation and value co-destruction (e.g. unwillingness to integrate or misintegration of resources), is warranted to fully understand the value creation process within service ecosystems (Echeverri & Skålén, 2021; Plé, 2017). Moreover, in connection to these limitations, scholars call for a more refined understanding of the foundational premises of service ecosystems in service-dominant logic (e.g., loosely coupled actors) to refine theory more holistically (Mustak & Plé, 2020).

1.3. RESEARCH OBJECTIVES AND QUESTIONS

This thesis aims to explore B2B–service innovation, researching various contemporary empirical and theoretical angles to better understand how B2B–service innovation can be achieved. The main research question of this thesis is: *How does value creation unfold in B2B–service innovation?* This high-level question entails various sub-questions to address the previously introduced research gaps. Table 1 provides an overview of the sub-questions answered within the four articles that form the basis of this thesis.

Table 1: Thesis Research Questions

	Question
Thesis	How does value creation unfold in B2B–service innovation?
Article 1	1) How can B2B–service innovation be achieved? 2) What are the underlying concepts that inform B2B–service innovation
Article 2	1) How and why do tensions and conflicts occur in B2B relationships between co-creating actors in the professional service sector? 2) How can these tensions and conflicts be effectively avoided?
Article 3	1) What conceptualises value co-creation capabilities in B2B digital servitisation? 2) How do value co-creation capabilities contribute to new digital service platform development?
Article 4	1) How is value likely to be co-destroyed in the value process of service ecosystems? 2) What factors (or conditions) impact value co-destruction and its manifestations in open banking?

Article 1 focuses on understanding the state of the art of the B2B–service innovation literature. The study does this by exploring the literature's characteristics, the B2B–service innovation process, and the concepts that inform it. In addition, future research avenues are formulated. Article 2 narrows down the micro level, specifically the relationship between two value–co-creating actors in professional services, representing a central theme of service innovations. It investigates challenges that value–co-creating actors face during the value co-creation process, enhancing our understanding of contextual factors, such as the role of institutional logic in value assessment. Article 3 investigates digital servitisation. The study aims to explore the value co-creation capabilities of actors, focusing on developing digital service platforms. Lastly, Article 4 explores the phenomenon of emerging service ecosystems and how the underlying dynamics affect the manifestations of value co-creation and value co-destruction, enabling an improved understanding of how value network interactions can contribute to or hamper value creation.

1.4. OVERVIEW OF ARTICLES

Table 2: Overview of the Thesis Research Articles

	Article 1	Article 2	Article 3	Article 4
Title	B2B–service innovation and What We Know about it: A Systematic Literature Review	Conflict by Design and Why Institutions Matter in Service Design: A Case of a German Creative Agency in China	Unlocking Digital Servitisation: A Conceptualisation of Value Co-creation Capabilities	The Dark Side of Service Ecosystems: Value Co-destruction in the Value Process of Open Banking
Co-Authors	Dmitrij, Slepniov	Dmitrij, Slepniov	Dmitrij, Slepniov	Dmitrij, Slepniov; Svetla, Trifonova Marinova
Article RQs	• How can B2B–service innovation be achieved? • What are the underlying concepts that inform B2B–service innovation	• How and why do tensions and conflicts occur in B2B relationships between co-creating actors in the professional service sector? • How can these tensions and conflicts be effectively avoided?	• What conceptualises value co-creation capabilities in B2B digital servitisation? • How do value co-creation capabilities contribute to new digital service platform development?	• How is value likely to be co-destroyed in the value process of service ecosystems? • What factors (or conditions) impact value co-destruction and its manifestations in open banking?
Key Findings	• The B2B–service innovation literature is characterised by fragmentation and lacks overall explainability	• Failing to identify institutional logics of value assessment and aligning service interfaces, infrastructure, and actualisation accordingly enhances the chances for dark-	• Four capabilities enable value co-creation and value co-production in digital servitisation: 1) digital literacy, 2) aligning, 3) reflecting, and 4) coping	• Value creation is a contextually embedded interplay between value co-creation and co-destruction, driving a dialectic value process.

		side relationship manifestations, independent of traditional governance mechanisms		• Value co-destruction has context-(regulative maturity) specific and universal manifestations.
Status	Submitted	Published	2nd Review Round	Submitted
Journal	Journal of Service Management	Journal of Business Research	Journal of Business Research	Journal of Service Research

1.5. STRUCTURE OF THE DISSERTATION

This thesis is structured around six chapters consisting of a synopsis and four research articles.

Chapter 1 presents the thesis background, motivation and gaps, research objectives and questions, and a short overview of the research articles.

Chapter 2 consists of an excerpt of the empirical context explored in the three empirical articles. It covers business-to-business relationships (B2B), international value creation, digital servitisation, and emerging digital service ecosystems.

Chapter 3 presents the theoretical and conceptual framework, focusing on theorising in-service innovation using the lens of service-dominant logic.

Chapter 4 explains the philosophy of sciences and the methodology, covering the research design, data selection, collection, and analysis methods.

Chapter 5 summarises the four research articles, outlining the background, research question, methodology, key findings, and contributions.

Chapters 6-9 represent the four research articles forming the basis of this thesis.

Chapter 10 concludes the thesis by highlighting the study's key findings, theoretical and managerial implications, and future research avenues.

CHAPTER 2. EMPIRICAL CONTEXT

2.1. BUSINESS-TO-BUSINESS RELATIONSHIPS

Research has shown that service innovation significantly affects firm performance, value, and value creation (Dotzel & Shankar, 2019b; Durst et al., 2015; Feng et al., 2020; Möller et al., 2008). However, service firms are not all the same. Typically, they can be categorised into business-to-consumer (B2C) and business-to-business (B2B) firms. Without a doubt, many of us can quickly recall famous, mostly B2C service innovators such as Apple, Amazon, Google, and Facebook. What is less known are their B2B counterparts. This knowledge gap also pertains to the B2B–service innovation literature, a widely overlooked stream. Few contributions guide successful B2B–service innovation (Baines et al., 2009; Goffin et al., 2021; Lilien, 2016; Mora Cortez & Johnston, 2017; Wiersema, 2013). This void is more surprising considering that B2B firms make up the lion's share of the economies of most Western nations in terms of overall revenue generation (Dotzel & Shankar, 2019; Wiersema, 2013).

Traditionally, B2B firms have relied on technological capabilities for competitive advantage. However, service and service innovation are the agenda today (Biemans & Griffin, 2018; Goffin et al., 2021; Lilien, 2016; Mora Cortez & Johnston, 2017). As a result, more and more B2B firms have become service-dominant, as the likes of IBM, Xerox, Rolls Royce, Alstom, and Siemens exemplify. If this transition was not impactful enough, affecting business models, organisational culture, processes, and practices, more general trends further complicate the journey. For example, service buying and innovation processes have become more complex as more stakeholders are involved (e.g. co-creation). Moreover, the advancement of technologies, particularly the internet, has created global electronic markets affecting margins, and commoditisation is accelerating even within high-tech firms (Kumar & Ganguly, 2020; Lingqvist et al., 2015; Pine, 2015; Shih, 2018). Given these complexities, B2B firms now more than ever need to learn how to manage their service innovation efforts successfully (Biemans & Griffin, 2018; Lilien, 2016).

Table 3: Differences Between B2B and B2C and B2B–SI and B2C-SI (Dotzel & Shankar, 2019)

Characteristics of Business Markets and Consumer Markets		
	B2B	**B2C**
Number of customers	Low	High
Geographic location of customers	Generally concentrated	Generally dispersed
Customer contact	Direct	Indirect
Buying sequence	Complex	Simple
Vendor evaluation	Generally formal	Generally informal
Value pricing	Easy to implement	Difficult to implement
Service design and delivery	Customised	Standardised
Promotion	Seller comes to buyer	Buyer comes to seller
Distribution channels	Short and direct	Long and indirect
Contracts	Formal	Informal
Depth of relationship	Deep	Shallow
Vendor loyalty	High	Low
	B2B–SI	**B2C-SI**
Services Characteristics		
Scalability	Low	High
Intangibility	High	Low
Heterogeneity	Low	High
Development costs	Moderate	High
Bases of Resource-Based Advantage		
Value-creating ability	High	High
Rarity	High	High
Inimitability	High	Low
Substitutability	Low	Low

Table 3 highlights some of the differences between B2C and B2B firms that affect service innovation, emphasising the importance of dedicated research efforts. However, this does not mean that insights from B2C service innovation cannot be integrated into B2B–service innovation. Instead, it serves as a basis for cautioning or sensitising that some B2C findings will not benefit B2B settings. For example, B2C services can be innovated with a much more homogenous customer group (e.g. in terms of behaviours or culture) in mind, as is the case for B2B services. Hence, different practices, challenges, or resources may be required. This thesis contributes to the advancement of the B2B–service innovation literature by exploring various

contemporary B2B contexts further specified as constituting the collection of the papers in the thesis.

2.2. ARTICLE 2 – FOREIGN AND LOCAL VALUE CREATION FOR DOMESTIC AND INTERNATIONAL DEMANDS

The economic reforms starting in the late 70s established China as one of the most attractive locations for internationalisation and foreign direct investments (Fung et al., 2004). Since then, the country has experienced a significant transition from the world's factory to an increasingly sophisticated market and innovation powerhouse (CSIS, 2021; Yiu & Mercer, 2014). This transition has encouraged many multinational corporations to establish continental headquarters and research and development facilities within China's borders. Along with these developments, service providers associated with these multinationals from the home turf also began to internationalise and follow their clients.

Article 2 follows a German service provider from the creative industry and its German industrial client who triggered its process of internationalising towards Asia. This relationship is characterised by various interesting contextual nuances that are important to the case. For instance, their relationship is characterized by fundamental differences in terms of institutional logic. The service provider perceives the world from a service-dominant logic perspective, whereas the client relates more to product-dominant logic. Despite these differences, both have a longstanding past and a successful business relationship across global markets (e.g. Europe, North America, and South America). However, their collaboration within China challenged this previously fruitful relationship, causing tension and conflicts that eventually led to relationship termination.

The context of Article 2 provides valuable insights into the challenges involved when value–co-creating in culturally complicated and foreign markets, despite a common origin and a long history of working together. Moreover, it offers insights into the importance of the contextually and institutionally embedded value assessment of resources within service innovation.

2.3. ARTICLE 3 – DIGITAL SERVITISATION

Germany's "Industrie 4.0" or China's "Made in China 2025" are some of the most ambitious examples of a global transformative trend. Manufacturing and basic service firms across industries engage in an increasingly accelerating, transformative process that reconceptualises the essential elements of their business models to accommodate service-driven growth. This development is termed servitisation (Baines et al., 2009, 2017; Brax, 2005; Gebauer et al., 2012; Brax, 2005; Gebauer, 2012).

Servitisation promises benefits such as growing and reoccurring revenues or increased value co-creation (Baines, 2017). However, achieving these benefits is not an easy undertaking, and research also struggles to explain how that can be achieved (Kowalkowski et al., 2017; Luoto et al., 2017; Raddats et al., 2019). For example, the servitisation literature shows that many servitising businesses experience paradoxical developments (Gebauer et al., 2005, 2020). Firms that engage in servitisation may find themselves in a situation in which their investments increase revenues but not necessarily profits. So far, this problem has been mainly associated with cognitive and organisational limitations, such as using the product innovation process for service innovation, focusing on the value perceived from the firm perspective as opposed to the customer perspective, or the lack of a service culture (Gebauer et al., 2005).

In tune with global developments, servitisation has become increasingly digital, leading to the advent of digital servitisation, which describes servitisation-utilising technologies. Digital service platforms have gained increasing attention due to their value creation potential and instrumentality for establishing competitive barriers. Notably, the appreciation of platforms as effective venues for value co-creation has driven this awareness (Cenamor et al., 2017; Cutolo et al., 2021). Article 3 explores industrial and service firms that engage in the digital servitisation process, including offering digital service platforms and service innovations based on them. The study utilises data from leading German, Danish, US, and Chinese firms to derive value co-creation capabilities in digital servitisation. From the study, capabilities are conceptualised and lessons for their configuration are derived.

2.4. ARTICLE 4 – EMERGING DIGITAL SERVICE ECOSYSTEMS

Without a doubt, a key pillar of any strong economy is a healthy financial service ecosystem. What characterises finance is that it has historically been among the frontrunners in adopting digital technologies, arguably creating a competitive edge (Gandhi et al., 2016). However, incumbent firms find themselves increasingly challenged by digital natives, questioning their role in value creation and driving unprecedented service ecosystem change. These transformational developments have become particularly evident in the context of open banking.

Open banking is a practice that enables third-party service providers (TPPs), such as fintechs, to access customer banking data typically stored at established financial actors, such as retail banks. TPPs then use this data to offer advanced banking services, such as account aggregation and associated analytic services. However, how this process takes place varies greatly, depending on the given regulative framework. For example, the European Union (EU), a leader in developing this practice, has established directives defining the scope of actions. In contrast, the United States (US) may be considered latecomers and lag behind in establishing a regulative framework (European Commission, 2007, 2015; The White House, 2021).

These differences allow us to observe distinct emerging service ecosystems with unique value processes. Within the EU, retail banks must provide free and secure application programming interfaces (APIs), enabling TPPs to connect and gain access to data with customers' permission. In the US, retail banks may decide whether they want to engage in open banking or not, given the lack of directives. However, this does not stop TPPs from retrieving customer data. Instead, these digital natives have developed a workaround: screen scraping, a practice that utilises customer login credentials to retrieve customer data from retail banks without their consent.

Independent of the maturity of the regulative framework, incumbent actors experience increasing competitive pressure from digital natives, creating opportunities for value creation and friction between new and old actors in the emerging service ecosystem. For instance, many digital natives thrive to scale up their activities across industry borders, connecting previously disconnected services. In contrast, many incumbents focus on protecting established recurring revenue streams, struggling to engage in digital transformation successfully (Bracket et al., 2018; Bughin et al., 2019; Erlebach et al., 2020).

These developments are not unique to Europe or North America but transcend borders, particularly in the global interconnected financial system. China's current state of open banking development may be like that of the US (Chuard, 2021; Mallick et al., 2016; Xin, 2018). However, China has declared the development of strong digital service ecosystems a strategic priority in its recent 14th Five Year Plan, and it has previously proven its ability to implement such goals swiftly. Thus, it may benefit from taking notes from developments worldwide and utilising lessons that can be learned from the affected actors. Nonetheless, the current literature on emerging service ecosystems, particularly their underlying value process, remains limited (Echeverri & Skålén, 2021; Laud et al., 2019; Mustak & Plé, 2020; Plé, 2017). Article 4 contributes to filling this gap by exploring the value process as constituting of value co-creation and value co-destruction.

CHAPTER 3. THEORETICAL AND CONCEPTUAL FRAMEWORK

3.1. THEORISING IN SERVICE INNOVATION

This thesis is positioned in the service innovation literature, a multidisciplinary stream benefiting from contributing fields as diverse as marketing, management, and organisational sciences (Carlborg et al., 2014; Toivonen & Tuominen, 2009). This section introduces the theoretical foundation underlying the articles.

3.1.1. PERSPECTIVE ON SERVICE INNOVATION

Traditionally, the innovation literature has been occupied with product innovation studies (Biemans et al., 2016; Storey et al., 2016). However, recent years have experienced a surge in attention to innovation in intangibles (i.e. services) (Randhawa & Scerri, 2015; Witell et al., 2016), acknowledging the rise of the service economy and of service innovation as a driver for value creation (Barras, 1990; Dotzel et al., 2013; Miles, 2001, 2008; Ordanini & Parasuraman, 2011; Sawhney et al., 2006). However, theorising in service innovation remains limited (Biemans et al., 2016; Flikkema et al., 2007), which can be related to its inconsistent definition (Ostrom et al., 2010; Witell et al., 2016). As a result, many service innovation studies rather loosely apply core concepts and even do so interchangeably (Biemans et al., 2016; Gustafsson et al., 2020; Witell et al., 2016). The following section will clearly position this thesis to avoid confusion.

The current discussion of how service innovation can be theorised can be categorised into three perspectives: assimilation, demarcation, and synthesis, each with a distinct understanding of what conceptualises service innovation (Coombs & Miles, 2000; Gallouj & Savona, 2009; Gallouj & Weinstein, 1997; Witell et al., 2016). The assimilation perspective does not differentiate between products and services. It argues that they are the same; thus, theories from the product innovation domain can be applied to service innovation (Gallouj, 2002; Toivonen & Tuominen, 2009). In contrast, the demarcation perspective treats service innovation differently from product innovation. Hence, service innovation requires novel theories (Drejer, 2004; Gallouj & Weinstein, 1997). Lastly, the synthesis perspective criticises the former opposing views, suggesting an integrative theoretical perspective open enough to include service and product innovation (Coombs & Miles, 2000; Gallouj & Savona, 2009).

This thesis is grounded in the synthesis perspective for the following reasons. First, studies increasingly acknowledge that service innovation research highlights critical

elements, such as customer involvement in value creation (Carlborg et al., 2014; Sandén et al., 2006) a topic that have been neglected in product innovation research, providing fruitful avenues for integration (Drejer, 2004). In addition, focusing on a narrow perspective of service innovation (i.e. demarcation and assimilation) may overlook the complex contemporary phenomena of modern economies and markets (Miles, 2012). For instance, many services require some physical form (e.g. product or artefact) to be activated (Bryson et al., 2004; Von Nordenflycht, 2010). This increasingly difficult distinction between products and services becomes particularly evident in servitisation, the transformation of typically manufacturing firms towards service-driven businesses. As a result of this transformation, firms often offer product–service systems. Rolls Royce's "Total Care" is a common example: it offers airlines guaranteed flight hours covering all services like maintenance instead of mere engines (Baines et al., 2017). Therefore, positioning oneself in the synthesis perspective allows researchers to integrate otherwise disconnected theoretical contributions more freely and address complex and ambiguous contemporary phenomena.

3.1.2. THEORETICAL FRAMEWORK OF SERVICE INNOVATION

Service-dominant logic (SDL) (Vargo et al., 2008; Vargo & Lusch, 2004) offers a holistic and service-centred understanding in line with the synthesis perspective and is increasingly accepted as a theory of service innovation with value co-creation at its core (Akaka et al., 2019; Barrett et al., 2015; Lusch & Nambisan, 2015). It defines five fundamental axioms to clarify the nuances of its theoretical framework, which will be further elaborated as follows.

Table 4: Service-Dominant Logic Axioms (Vargo & Lusch, 2016)

Axiom	**Statement**
Axiom 1	*"Service is the fundamental basis of exchange."*
Axiom 2	*"Value is co-created by multiple actors, always including the beneficiary."*
Axiom 3	*"All social and economic actors are resource integrators."*
Axiom 4	*"Value is always uniquely and phenomenologically determined by the beneficiary."*
Axiom 5	*"Value co-creation is coordinated through actor-generated institutions and institutional."*

SDL conceptualises service (singular) as a relationship and process in which actors (e.g. service providers and customers, organisations, or technology) engage and contribute resources to create value for themselves and others (Lusch & Vargo, 2018; Vargo et al., 2008). It reconceptualises service to distinguish it from services (plural) merely associated with output units (e.g. intangible goods). SDL argues that service as the basis of exchange defines market dynamics more realistically than the mere

transfer of intangible goods; hence, market actors engage in service-for-service exchanges (Axiom 1) (Lusch & Vargo, 2018).

Service-for-service exchanges relate to the most central concept of SDL: value co-creation. Lusch & Nambisan (2015) define value co-creation as *"the process and activities that underlie resource integration and incorporate different actor roles in the service ecosystem"*. In SDL, value is always co-created because no one actor can hold all the resources to create value for oneself or another. Hence, actors must draw on and integrate the resources of others, implying the involvement of the beneficiary. Resource integration, a concept underlying value co-creation, refers to the purposeful utilisation of system resources to create value for oneself and others (Axiom 2 & 3) (Lusch & Vargo, 2018; Moeller, 2008).

The objective of the creation process is to enhance value, which SDL defines as wellbeing, viability, or utility and is linked to resources. Resources may be understood as anything (e.g. knowledge and skills) that contributes to creating value for a specific actor or beneficiary (e.g. customer). Interestingly, resources are not valuable per se but have an emerging character; hence, they become valuable, implying an experiential condition (Lusch & Vargo, 2018). This value assessment (i.e. experience) depends on the resource's ability to fulfil the beneficiary's need in a specific use and context that relates to the process of resource integration (Lusch & Vargo, 2006; Vargo & Lusch, 2004). For instance, a firm may purchase a market report (new resource), enabling it to adjust (resource integration) its marketing campaign (existing resource) to meet customer needs. If this resource integration has led to a satisfying result, the firm is likely to consider the resource valuable. This example highlights value co-creation as the purposeful configuration of new and existing resources (e.g. marketing message), enabling value creation (i.e. service innovation) (Axiom 4) (Lusch & Nambisan, 2015; Verma et al., 2012).

Moreover, SDL suggests the existence of institutions, that is, rules, norms, or beliefs that affect (e.g. enable and constrain) the agency of social actors (North, 1990; Scott, 2008). In addition, SDL points towards institutional arrangements, which may be understood as a collection of interrelated institutions, also called institutional logics (Vargo & Lusch, 2016). Institutions are considered essential because they influence and shape the resource integration and value assessment process, guiding and enabling meaningful interactions (Axiom 5) (Lusch & Vargo, 2018; Vargo & Lusch, 2016).

Based on the theoretical understanding presented above, Lusch and Nambisan (2015) define service innovation as *"the rebundling of diverse resources that create novel resources that are beneficial (i.e. value experiencing) to some actors in a given context; this almost always involves a network of actors, including the beneficiary (e.g. customer)."*

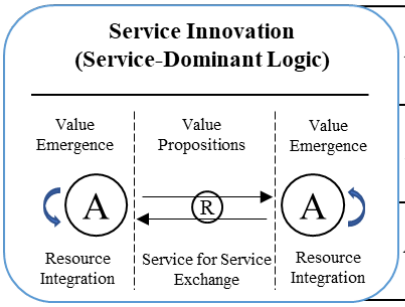
Furthermore, Lusch and Nambisan (2015) propose a tripartite framework that further depicts this conceptualisation of service innovation in SDL more broadly, including service ecosystems, service platforms, and value co-creation (see above). They argue that actors find themselves in actor-to-actor networks, encountering a duality (Orlikowski, 1992; Walsham & Han, 1991). These actors act within a structure (service ecosystem) constrained by specific sets of norms, values, and rules (institutional norms and arrangements), limiting the actor's agency. Simultaneously, actors create and shape these structures through their actions in the value creation process (Lusch & Nambisan, 2015). Therefore, actors are effectual entities (Read et al., 2009; Vargo & Lusch, 2011) that collectively influence their environment. Therefore, service ecosystems are emerging actor-to-actor structures (Lusch & Nambisan, 2015). Vargo and Lusch (2011) define service ecosystems as *"a relatively self-contained, self-adjusting system of mostly loosely coupled social and economic (resource-integrating) actors connected by shared institutional logics of mutual value creation through service exchange*".

Within these emerging structures, actors aim to enhance their viability through resource integration. However, the emerging and loosely coupled nature of service ecosystems complicates the process of resource integration. Service platforms address this limitation by enabling resource liquefication (making resources available) and resource density (sufficient resource base), facilitating efficient and effective resource integration. Therefore, service platforms represent venues for value co-creation and service innovation (Lusch et al., 2010; Lusch & Nambisan, 2015; Norman, 2001). Lusch and Nambisan (2015) define service platforms as *"a modular structure that consists of tangible and intangible components (resources) and facilitates the interaction of actors and resources (or resource bundles)".*

3.2. CONCEPTUAL FRAMEWORK

Service innovation and its research are characterised by significant complexity. For instance, service innovation increasingly occurs within the complex service systems of multiple interconnected actors (Lusch, 2011). The proliferation of technology changes the context of resource integration at an unprecedented pace and scale. For example, data analytics enables deeper customer insights and relationships, cloud computing facilitates convenient resource distribution, and application programming interfaces permit the connection of previously disconnected service systems (Rust & Huang, 2014). Challenges like (high-tech) commoditisation are accelerating, making it more complex for firms to remain competitive, which affects their resource integration patterns (Shih, 2018). In addition, service innovation research has recognised its Western bias, causing it to look outwards, particularly towards Asia, acknowledging its emerging importance for the global economy (Macaulay et al., 2012; Ostrom et al., 2015).

In sum, the field of service innovation research is changing, and scholars agree that fundamental questions remain unanswered despite increasing efforts. Ostrom et al.'s (2015) paper represents one, if not the most recognised, attempt to articulate research priorities within the service domain. This thesis contributes to the advancement of five of these priorities: the *"stimulation of service innovation", "facilitation of servitization", "leveraging service design", "understanding value creation",* and *"understanding service in a global context".* These priorities represent interrelated topics that benefit from learning at their intersection and interplay. These topics have in common the fact that they point towards a limited understanding of how value creation in service innovation unfolds (Biemans et al., 2016; Lusch & Nambisan, 2015; Ostrom et al., 2015). This thesis addresses this issue by exploring the value creation process within different actor dynamics and from different value co-creation angles informed by SDL. Figure 1 presents the conceptual framework of this thesis in relation to the foci of the articles.



	Context	VCC Angle
Article 2	Firm to Firm	Challenges
Article 3	Human to Machine to Human	Capabilities
Article 4	Systemic	Manifestations

Figure Legend: A = Actor, R = Resource

Figure 1: Conceptual Framework

CHAPTER 4. METHODOLOGY

4.1. PHILOSOPHY OF SCIENCE

Critical realism is a philosophical stance that bridges positivism and postmodernism (Bhaskar, 2010; Reed, 2005). In the critical realist stance, reality is an independent human construct that is not directly accessible through observation or knowledge. Reality can be categorised into three domains, which will be exemplified by the metaphor of a tree. When looking at a tree from behind a wall, all that is visible to the observer are its branches and leaves. This limited view is what critical realism would describe as the empirical domain that can be observed. However, even without seeing the entire tree, we know that it has a trunk, representing the actual domain and characterising what is known but may not always be observed. Lastly, the tree roots would represent the real domain, exemplifying what remains hidden, and the causal mechanism that create the necessary conditions for the actual and empirical domain independent of our knowledge and experience (Bhaskar, 2008; Saunders et al., 2019).

Critical realism knows two ways to learn about reality: the things that were observed and experienced and through the process of *"reason backwards"* or, in other words, the process of abduction (see the next section) (Reed, 2005). The combination of the two ways truly characterises critical realism, emphasising the desire to think holistically or systemically about the things we can observe to explain them (Saunders et al., 2019).

Moreover, critical realism implies that the social world consists of social structures or mechanisms that give rise to the phenomena one tries to understand. Fundamentally, critical realists aim to explain the observable by theorising underlying causes (social structures) and mechanisms (Bhaskar, 2010). However, knowledge generated from a critical realist stance may not be understood as a universal truth. Instead, it acknowledges that knowledge is historically situated, meaning that it is the product of its time and is socially constructed based on what is believed to be true at any given time (Bhaskar, 2008).

4.2. RESEARCH DESIGN

4.2.1. APPROACH TO THEORY DEVELOPMENT

This study subscribes to an abductive research approach to theory development. Abduction aims to create testable conclusions derived from the interaction between the specific (data) and the general (theory). The outcome of abduction may be a new or modified theory or the integration of known theories (Saunders et al., 2019).

The abduction process is characterised by an iterative and constant back and forth between theory and data, thus integrating both deduction and induction into its approach (Suddaby, 2006). In doing so, abduction benefits from discovering induction and the justification of deduction (Dorst, 2011). The process is initiated through an initial wondering or a surprising observation (phenomenon), sparking the researcher's interest in developing a plausible or most likely theory of how an event may have occurred (Saunders et al., 2019). This cyclical process builds on previous iterations, with each iteration refining identified themes and patterns, potentially initiating additional data collection, causing new surprising observations, refining theory further, and so forth (Saunders et al., 2019; Van Maanen et al., 2007). This inherent flexibility of abduction represents a key strength and serves as a reason why various scholars have pointed out its applicability to critical realism (Saunders et al., 2019) and case study research (Dorst, 2011; Dubois & Gadde, 2002).

4.2.2. CASE STUDY DESIGN

Case studies belong to some of the most common research designs within the social sciences, including business research (Eisenhardt & Graebner, 2007; Eisenhardt, 1989). They are particularly well suited for research aiming to inquire about a contemporary phenomenon in its setting or context in which the researcher has little or no influence (Eisenhardt, 1989; Yin, 2018). Typically, case studies pose what, how, or why questions to understand the dynamic interactions between actors involved in the case context (Saunders et al., 2019; Yin, 2018). As such, case studies can generate rich insights into empirical contexts, which may contribute to exploring what is happening and why something is happening (causality) and potentially make inferences into the effects and implications of actions (Dubois & Gadde, 2002). Thus, case studies can be used to test or develop theories (Dubois & Gadde, 2002; Eisenhardt & Graebner, 2007; Eisenhardt, 1989; Yin, 2018).

Moreover, Yin (2018) points out that case studies do not follow a one-size-fits-all approach. Case studies can be flexibly applied to accommodate various research philosophies, ranging from positivism to interpretivism. Thus, case studies are not limited to a single purpose, providing a platform for studies as diverse as deductive, explanatory or inductive, and exploratory ones. However, some scholars have also criticised case study research for its limitations concerning theory development. Flyvberg (2011) argues that this criticism originates primarily from "misunderstandings" about case studies' ability to generalise and to develop theoretical contributions. Yin (2018) clarifies that case studies are not universally generalisable to populations but are instead generalisable to theoretical propositions. Based on this claim, Yin (2018) introduces the concept of analytical generalisation, the process of discussing how case findings challenge or support existing theory and showing how the developed theory might transfer to similar contexts.

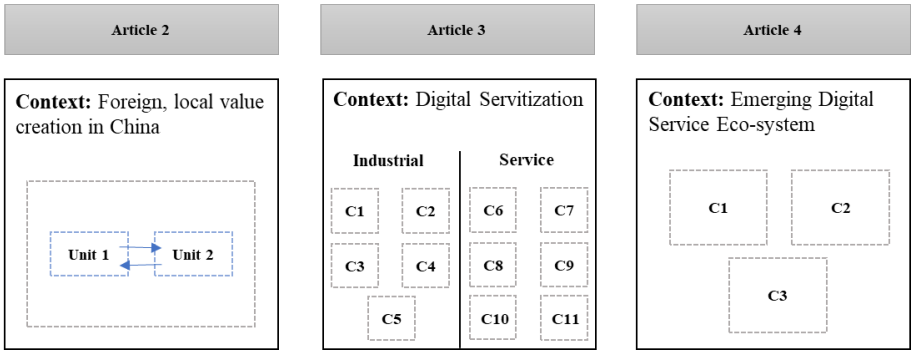


Figure 2: Empirical Article Contexts (adopted from Yin, 2018)

4.3. DATA SELECTION

This thesis adopts two case study designs: Article 2 utilises an in-depth single embedded case study, and Articles 3 and 4 adopt a multiple case study design. The figure provides further insights into the case contexts and design, while Table 5 shows brief case descriptions.

Table 5: Overview of Article Cases

Article	**Case**	**Industry**	**Origin**	**Type**	**Case Description**	**# Employees**
Article 2	Alpha	Creative	DE	MNE	Creative agency (advertising solutions)	> 4,000
Article 3	Alpha	Machinery/ equipment	DE	MNE	Mechanical engineering (tobacco machinery)	> 5,000
	Beta	Machinery/ equipment	DK	MNE	Mechanical engineering (water technologies)	> 20,000
	Gamma	Engineering	DK	MNE	Engineering solutions (power solutions)	< 20,000
	Delta	Engineering	DE	MNE	Mechanical engineering (renewable energies)	> 20,000
	Epsilon	Equipment/ electronics	CN	MNE	Technology (telecommunication technologies)	> 100,000
	Zeta	Banking/ insurance	DE	MNE	Direct bank (retail banking solutions)	< 5,000

	Eta	Marketplace	DE	SME	Online marketplace (real estate)	< 1,000
	Theta	Shipping	DE	MNE	Logistics (container shipping and transportation)	> 10,000
	Iota	Consulting	US	MNE	Consulting (management consulting)	> 20,000
	Kappa	Consulting	DE	SME	Digital agency (strategy and innovation consulting)	> 500
	Lambda	Consulting	DE	SME	Consulting (management and innovation consulting)	< 500
Article 4	Alpha	Banking	US	MNE	Finance (retail banking)	> 200,000
	Beta	Banking	CA	Large	Finance (retail banking)	< 50,000
	Gamma	Banking	Scand.	MNE	Finance (retail banking)	> 25,000

4.4. DATA COLLECTION

This thesis makes use of multiple data collection sources. The primary data consists of 37 open and semi-structured interviews and five participant observations, and the secondary data consists of 66 archival records and documentation. Table 6 provides an overview of the data sources used in the three empirical articles in this dissertation.

Table 6: Overview of Thesis Data

Article	**Primary Data**	**Secondary Data**	**Period**
Article 2	3x Meeting notes 5x Participant observation 5x Open interviews 7x Semi-structured interviews	16x Documents	2017–2018
Article 3	13x Semi-structured interviews 4x Webinar recordings	35x Documents	2020–2021
Article 4	11x Semi-structured interviews 1x Webinar recordings	15x Documents	2021

4.4.1. INTERVIEWS

A particular nuance of business and management research or social science more generally is that knowledge held by people supports the development of explanations, such as insights into how things may be characterised, why they occur, or what they

mean (Bryman, 2012). Hence, it is not surprising that some scholars consider interviews to be one of the most important sources of evidence (Yin, 2018).

An interview may be best understood as a purposeful discussion between two or more individuals (Glock et al., 1957). Research can benefit from interviews in two ways. First, interviews can provide in-depth accounts of knowledge that are highly valuable and valid for answering a particular research question. Alternatively, if one has yet to define a research question, interviews can provide the necessary foundation to discover a relevant research topic (Saunders et al., 2019).

This thesis utilised two types of interviews: open or unstructured and semi-structured. Unstructured interviews tend to be informal conversations that explore a theme or topic more generally. Hence, unstructured interviews do not follow a clearly defined interview guide or more structured interview approaches. Interviewers try to engage in an open, fruitful, and exploratory conversation on emerging themes, which is beneficial for discovering relevant research topics.

Semi-structured interviews follow a road map typically consisting of themes and associated questions summarised in a so-called interview grid or guide. Depending on the researcher's philosophical stance, the questions may change throughout the research as the understanding of the topic develops or to accommodate individual context and interview encounters, and more specific information may become necessary. Questions may be derived from sources such as previous unstructured interviews or theory (Saunders et al., 2019).

The interviews collected for this thesis were collected in three sets (see Table 6). Article 2 conducted 12 open and semi-structured interviews during 2017 and 2018 at the case location in Beijing, China. However, affected by the restrictions imposed as a response to the Covid-19 pandemic, data collection in China has gotten to hold, forcing the researcher to return to Denmark. As a result, the data collection for Articles 3 (2020–2021) and 4 (2021) was completed using video chat services from Denmark. Moreover, given the sociocultural characteristics of China (e.g. guanxi[1]), relationship building has become significantly more complicated, limiting the study's ability to conduct interviews with Chinese respondents. Therefore, Articles 3 and 4 focused on collecting data from respondents from culturally closer countries such as Denmark and Germany (see Table 5).

Relationships with potential interview partners have been established in two ways: previously existing personal relationships (networks) or social media requests on LinkedIn. Depending on the article's research question, interviewees were identified purposefully to ensure the best fit for the inquiry. For example, Article 2 was

[1] Guanxi = Chinese for relationships; in a business context also referred to as close networks or influential relationships

interested in the service provider–customer relationship of the case company, making it necessary to engage with various types of actors involved in the relationship, from junior to executive staff. However, Articles 3 and 4 were interested in subjects more related to senior-level staff involved in topics such as leadership, strategy development, and service and practice development.

To ensure the establishment of rapport, or in other words, shared trust and belief in professionalism, interviews were carefully prepared, researching interviewees' background information. In addition, before each interview, it was ensured that the purpose of the data collection was clearly articulated and agreed upon and it was explained how collected data would be handled. Depending on the interviewee's language preferences, interviews were conducted in English or German to ease communication and reduce the loss of information in translation. Moreover, with the permission of the interviewees, all interviews were audio-recorded and transcribed. The duration of the interviews varied from 15 to 107 minutes.

4.4.2. OBSERVATION NOTES

Observation is a useful means of collecting data if the researcher aims to learn what people do and how they do it. Observation may be supported by systematic viewing, recording, or description (Saunders et al., 2019). It may be best understood as a systematic account of events, dynamics, actions, or behaviours in social settings (Marshall & Rossman, 2016), Article 2 used participant observation. Participant observation is a form of observation that involves the observer in the activity being observed.

These observation notes were collected while the researcher was at the client-side of the case service provider in its China headquarters in Beijing (see Table 6). The case service provider granted the researcher access over a period of five days. Through this access, the researcher observed valuable insights concerning aspects, such as how the service development was facilitated at the client-side, including actor involvements, power struggles, and tensions and conflicts. As the researcher regularly interacted with the individual actors on the side, observations were participatory rather than shadowing, as in direct observations (Czarniawska, 2007). The insights derived from the observations were particularly viable for the development of contextual sensitivity (Bryman, 2012), enabling critical analysis of the case relationship.

4.4.3. ARCHIVAL RECORDS AND DOCUMENTS

Moreover, the thesis used multiple sources of documents, such as governmental directives and reports, consultancy reports, internal firm documents, company websites/press releases, and news and magazine papers (see Table 6). These data sources were collected for various purposes. For example, Article 2 utilised internal company documents to facilitate the development of service blueprints (service flows

and interactions). Article 3 used press releases to gain a better understanding of the cases' digital service offerings, and Article 4 used consultancy reports to evaluate the maturity of the regulative frameworks in the case countries. Overall, these secondary data sources provided a valuable means of triangulation, enabling a more nuanced understanding of the research topic.

4.5. DATA ANALYSIS

This thesis used multiple data analysis approaches to address different research questions and objectives and to enhance learning opportunities. The following section provides an overview of the applied methods and an understanding of their underlying rationales. Details of the exact analysis process can be found in the respective articles. For further guidance, see Table 7.

Table 7: Overview of Article Analysis Approaches

Article	Analysis Approach	Key Reference
Article 1	Bibliometric analysis (Bibliometrix) Counting (Excel) Thematic template analysis	(Aria & Cuccurullo, 2017) (Bryman, 2012; Saunders et al., 2009) (King & Brooks, 2018)
Article 2	Qualitative coding Design-driven research	(Bell et al., 2019; Miles et al., 2014) (Stickdorn et al., 2018)
Article 3	Grounded theory	(Gioia et al., 2013)
Article 4	Within- and cross-case analysis	(Eisenhardt, 1989; Miles et al., 2014; Yin, 2018)

Article 1: B2B–service innovation and what we know about it: A systematic literature review

Article 1 explores the B2B–service innovation literature to provide insights into the research stream, identify its underlying concepts, and propose future research directions, conducting a systematic literature review through descriptive and qualitative data analysis. The descriptive analysis used two approaches. First, the data were analysed using bibliometric methods facilitated through the R tool Bibliometrix (Aria & Cuccurullo, 2017). The benefit of this method is that the researcher can use bibliometric techniques within a web application without prior knowledge of R. Moreover, bibliometric analysis provides objectivity and rigour for synthesising and mapping the literature stream (Sinkovics, 2016; Zupic & Čater, 2015). In addition to bibliometric analysis, the review utilised counting to quantify the qualitative data (Bryman, 2012; Saunders et al., 2009), enabling the researcher to identify critical insights, such as applied methodologies and theories, that were not possible to identify using the given bibliometric tool.

The qualitative analysis of the identified articles utilised thematic template analysis (King & Brooks, 2018). Thematic analysis is a powerful approach to managing large qualitative datasets, as it provides a framework and facilitates the ordering and synthesising of data (Ritchie et al., 2003). Templates are a set of codes that guide the analysis. These codes are initially derived from a preliminary understanding of the literature and are continuously developed and refined throughout the analysis process. Therefore, template analysis aligns well with abduction by combining deductive and inductive features (Saunders et al., 2009). The researcher derives themes or categories over time, which are later refined to related clusters, forming the basis of knowledge communication. Critical to this process is repetition; therefore, topics that occur repeatedly are indicators of centrality. However, their relevance must be evaluated in alignment with the research topic, meaning repetition alone is not a sufficient condition (Bryman, 2012).

Article 2: Conflict by design and why institutions matter in service design: A case of a creative German agency in China

Article 2 examined how and why tensions and conflicts between B2B service relationships occur during value co-creation using two data analysis techniques: qualitative coding and design-driven analysis inspired by service design thinking. Coding is a systematic transformation or organisation of data into meaningful categories (Bryman, 2012). Given the qualitative nature of the thesis data, coding was approached through a close reading of the collected material, using the data management software NVivo to organise data based on predefined and emerging categories relevant to the research. In addition, annotations were added to capture the immediate thoughts and interpretations of the data. Based on this process, it was possible to define and organise data into corresponding nodes, adding structure to the analysis (Bell et al., 2019). Moreover, coding was completed in several iterations, emphasising swift coding soon after data collection to enhance emerging understanding. Additionally, this approach facilitated multiple readings of the material, reviewing the codes more frequently and improving relational understanding (Miles et al., 2014).

Following the coding, the study utilised design-driven approaches to the data analysis inspired by service design thinking, an increasingly popular approach in the social sciences (Fallman, 2008; Friedman, 2003; Patrício et al., 2018; Van Aken, 2004). Design research is particularly valuable to management and business sciences because it enables the researcher to understand various perspectives (e.g. customer perspective) in context through design thinking methods. Hence, core issues (e.g. causal conditions for tensions or conflict) could be identified in a human-centred fashion, which is critical to investigating actor relationships (Brown, 2008; Brown & Martin, 2015; Stickdorn et al., 2018).

This thesis focused on three analysis tools of service design: customer journey maps, service blueprints, and stakeholder maps. Customer journey maps facilitated the visualisation of the case customers' service experiences over time (Rosenbaum et al., 2017). Similarly, service blueprints enable the processual evaluation of cases' front- and back-end service development and delivery activities (Bitner et al., 2008). Both maps complement one another and provide an in-depth account of critical aspects, such as steps, relational touchpoints, emotions, needs, and bottlenecks or gaps. Lastly, the stakeholder map further enhanced the study's understanding of the relevant actors influencing customer–service provider relationships (Stickdorn et al., 2018), ultimately providing the necessary foundation to theorise the study's proposed relationship termination framework (see Section 7.6, Figure 11).

Article 3: Unlocking digital servitisation: A conceptualisation of value co-creation capabilities

Article 3 investigates value co-creation capabilities in digital servitisation, a field that has received limited conceptual attention. Therefore, the analysis was inspired by grounded theory, which is widely recognised as a critical and powerful approach to theory development based on qualitative data (Bell et al., 2019; Bryman, 2012). A strength of grounded theory is its ability to develop theory without a prior theoretical code from the ground, making it most feasible for the study (Saunders et al., 2019). This independence of the prior code also clearly distinguishes grounded theory from the thematic analysis applied in Article 1 (Saunders et al., 2009). However, despite its qualities, grounded theory has been criticised for its lack of rigour, causing unstructured and messy processes. Thus, this study followed the systematic approach of the grounded theory proposed by Gioia et al. (2013), commonly accepted within the servitisation literature (e.g. Kamalaldin et al., 2020; Reim et al., 2019). It emphasises the development of first-order categories, second-order themes, and aggregate dimensions to enhance theorising and data structure transparency. In this process, the study utilised structured coding, constant comparison, and further data collection, eventually leading to theoretical saturation (Bryman, 2012; Glaser & Strauss, 1967).

Article 4: The dark side of service ecosystems: Value co-destruction in the value process of open banking

Article 4 explores value creation interactions across service ecosystem actors in open banking, applying within- and cross-case analysis (Eisenhardt, 1989; Yin, 2018). This approach enabled the researcher to gain an in-depth account of the individual cases (e.g. attributes or themes), which could then be used to identify similarities and differences across the cases. A primary benefit of comparison across cases is that it supports generalisation and theory building (Miles et al., 2014). The study also utilised identified patterns to evaluate them against theory, contributing to the development of existing theories (i.e. service-dominant logic and value creation) (Yin, 2018).

Moreover, process tracing facilitated the analysis of ecosystem actors' interactions (George & Bennett, 2005), leading to a better understanding of system dynamics.

CHAPTER 5. SUMMARY OF THE ARTICLES

The following table includes an overview of the critical elements of the articles, building the foundation of this thesis. This summary enables the reader to gain quick and effective access to essential information.

5.1. ARTICLE 1

Title	**B2B–Service Innovation and What We Know About It: A Systematic Literature Review**
Background and Relevance	Services are the most significant contributor to national GDP in developed nations and increasingly in emerging and developing countries. Consequently, services have become the foundation for firm value creation. However, the innovation literature is characterised by a bias towards product innovation, neglecting unique characteristics of services. Moreover, most service innovation (SI) contributions focus on B2C relationships, neglecting B2B relationships despite their importance to the overall economy. This article presents a systematic literature review to improve our understanding of B2B–SI and propose future research directions, some of which are addressed in this thesis.
Research Question	This review explores the following questions: 1) How can B2B–service innovation be achieved? 2) What are the underlying concepts that inform B2B–SI?
Methodology	This study conducts a systematic literature review, analysing 54 articles on B2B–SI concepts, applying descriptive and thematic analysis.
Key Findings	The review provides insights into the characteristics of the B2B–SI literature stream, covering insights such as scientific production, source dynamics, and dominant methodologies and theories. In addition, the study highlights that the B2B–SI literature is fragmented and incohesive. Fifteen different

	concepts informing B2B–SI were identified, complicating theoretical development and overall explainability.
Contributions	The study adds to the B2B–SI research by synthesising the existing literature and highlighting its underlying concepts. In addition, the weaknesses of current concepts are discussed, and mechanisms are proposed as an appropriate concept for theorising. Moreover, building on the identified gaps in the literature, the study offers a set of 14 research agendas.

5.2. ARTICLE 2

Title	**Conflict by Design and Why Institutions Matter in Service Design: A Case of a German Creative Agency in China**
Background and Relevance	Tensions and conflicts in value co-creation often characterise B2B relationships. In the pursuit of facilitating such interactions more effectively, service design is gaining attention due to its ability to address complicated problems and multiple stakeholder perspectives. However, service design remains a theoretically poorly explored topic, and insights are often limited to B2C settings. This paper embarks on enhancing our understanding of how service design as a practice and service provider–customer relationships in B2B settings can be improved. For this mission, the study builds on the theoretical lenses of service design, service-dominant logic, and institutional theory.
Research Question	The study poses the following research questions: 3) How and why do tensions and conflicts occur in B2B relationships between service co-creating actors in the professional service sector? 4) How can tensions and conflicts in B2B relationships be effectively avoided?
Methodology	The study is situated within an international business environment, more specifically China. A longitudinal single embedded case study research design was applied to investigate the relationship between a German creative agency and its major German industrial client. The primary dataset consists of five

	open interviews and seven semi-structured interviews with key personnel involved in the investigated relationship along with related external actors, such as third-party service providers. Moreover, the data analysis applied (service) design thinking methods (e.g. customer journey maps, service blueprints, or stakeholder maps) to explore critical dynamics within the relationship. In addition, the study makes substantive use of structured content analysis using NVivo to identify supportive quotes.
Key Findings	The study shows that the service development phase is most prone to tensions and conflicts during value co-creation. Moreover, the study finds that failing to identify institutional customer logics of value assessment and achieve adequate alignment in terms of utilised service interfaces, infrastructure, and actualisation mechanisms fosters the development of dark-side relational manifestations. In addition, traditional governance mechanisms (e.g. asset specificity) did not prove sufficient to avoid adverse developments.
Contributions	This research contributes to the extant literature by linking service design, service-dominant logic, and institutional theory, demonstrating how they can benefit the analysis of value co-creation interactions with a particular focus on value assessment. These efforts are summarised in a framework highlighting the determinants of relationship termination and the development of dark-side relational constructs. Besides, the study exemplifies one of the first longitudinal and empirical accounts of service design in B2B settings, providing valuable insights and suggestions for avoiding the dark side in value–co-creating B2B relationships to practitioners.

5.3. ARTICLE 3

Title	**Unlocking Digital Servitisation: A Conceptualisation of Value Co-creation Capabilities**
Background and Relevance	The rise of services has inspired firms around the globe to adopt a servitised business model, focusing their efforts on advanced outcome-based service propositions for value creation and competitive advantage. The proliferation of digital technologies (e.g. big data analytics, cloud computing, or artificial

	intelligence) has steered these developments towards digital servitisation, the development of new services using digital technologies. These transformations are increasingly centralised on digital platforms as venues for value co-creation. Examples include Alibaba.com, Amazon AWS, and Shopify Plus. However, the successful value co-creation of digital service platforms and related services requires sufficient capabilities, which represents an underinvestigated topic in this context. This study addresses this limitation by exploring value co-creation capabilities in B2B digital servitisation focused on digital platform services.
Research Question	This research investigates the following questions: 1) What conceptualises value co-creation capabilities in B2B digital servitisation? 2) How do value co-creation capabilities contribute to new digital service platform development?
Methodology	This study applies a multiple case study design consisting of 11 cases from leading industrial and service firms offering digital platforms and services based on them, covering industries like machinery, equipment, engineering, and electronics from Denmark, Germany, and China. The primary data for this study consisted of 13 semi-structured interviews. The data analysis followed the systemic approach of grounded theory articulation, which was supported using the tools of grounded theory and NVivo.
Key Findings	The study identifies a set of four value co-creation capabilities in digital servitisation: 1) digital literacy, 2) aligning, 3) reflecting, and 4) coping. In addition, the study highlights that the identified capabilities can enable value co-creation and, potentially, value co-production.
Contributions	The study's main contribution lies in the proposition of four value co-creation capabilities in digital servitisation. Along with this contribution comes the provision of insights into the structural elements of these capabilities, enhancing the overall understanding of configuration for theory and practice. This also offers insights into how the proposed capabilities can

	facilitate value co-creation and, potentially, value co-production.

5.4. ARTICLE 4

Title	**The Dark Side of Service Ecosystems: Value Co-destruction in the Value Process of Open Banking**
Background and Relevance	The service innovation literature has adopted a systemic view of markets, actors, and resources. Based on this understanding, service-dominant logic promotes that actors interact in relatively open service ecosystems, leading to value co-creation. This study questions this view by exploring the value process in service ecosystems from a more nuanced perspective and by investigating the prospect of value co-destruction.
Research Question	This study poses the following questions: 1) How is value likely to be co-destroyed in the value process of service ecosystems? 2) What factors (or conditions) may impact value co-destruction and its manifestations in open banking?
Methodology	This study applies a multiple case study design consisting of three cases of leading retail banks actively engaging in open banking from the US, Canada, and the EU. The primary data for this study came from 11 semi-structured interviews. The data analysis followed a rigorous within-and cross-case analysis using NVivo.
Key Findings	The study identifies that the service ecosystem actors in open banking engage in a contextually embedded dynamic interplay between value co-creation and co-destruction, driving a dialectic value process. Moreover, the study finds that value co-destruction has context-specific manifestations, which can be related to the maturity of the cases' institutional regulative framework and universal manifestations that apply across all cases.
Contributions	This research contributes to the literature by providing a more nuanced view of how value creation unfolds in service

	ecosystems such as open banking. The study proposes the notion of a dialectic value process, understanding value creation as a dynamic interplay of value co-creation and value co-destruction. In addition, the study provides insights into specific value co-destruction manifestations and related conditional factors. Finally, the study offers practitioners advice on how to manage the dialectic value process.

REFERENCES (CHAPTERS 1-5)

Aarikka-Stenroos, L., & Jaakkola, E. (2012). Value co-creation in knowledge intensive business services: A dyadic perspective on the joint problem-solving process. *Industrial Marketing Management*, *41*(1), 15–26. https://doi.org/10.1016/j.indmarman.2011.11.008

Agarwal, R., & Selen, W. (2011). Multi-dimensional nature of service innovation: Operationalisation of the elevated service offerings construct in collaborative service organisations. *International Journal of Operations and Production Management*, 31 (11),1164–1192. https://doi.org/10.1108/01443571111178484

Akaka, M. A., Koskela-Huotari, K., & Vargo, S. L. (2019). Further advancing service science with service-dominant logic: service ecosystems, institutions, and their implications for innovation. In *Handbook of Service Science, Volume II*. (pp. 641–659). Springer, Cham. https://doi.org/10.1007/978-3-319-98512-1_28

Annarelli, A., Battistella, C., Nonino, F., Parida, V., & Pessot, E. (2021). Literature review on digitalization capabilities: Co-citation analysis of antecedents, conceptualization and consequences. *Technological Forecasting and Social Change*, *166*. https://doi.org/10.1016/j.techfore.2021.120635

Ardolino, M., Rapaccini, M., Saccani, N., Gaiardelli, P., Crespi, G., & Ruggeri, C. (2018). The role of digital technologies for the service transformation of industrial companies. *International Journal of Production Research*, *56*(6), 2116–2132. https://doi.org/10.1080/00207543.2017.1324224

Aria, M., & Cuccurullo, C. (2017). Bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, *11*(4). https://doi.org/10.1016/j.joi.2017.08.007

Baines, T. S., Lightfoot, H. W., Benedettini, O., & Kay, J. M. (2009). The servitization of manufacturing: A review of literature and reflection on future challenges. In *Journal of Manufacturing Technology Management*, 20(5), 547–567. https://doi.org/10.1108/17410380910960984

Baines, T., Ziaee Bigdeli, A., Bustinza, O. F., Shi, V. G., Baldwin, J., & Ridgway, K. (2017). Servitization: Revisiting the state-of-the-art and research priorities. *International Journal of Operations and Production Management*, *37*(2), 256–278. https://doi.org/10.1108/IJOPM-06-2015-0312

Barras, R. (1990). Interactive innovation in financial and business services: The vanguard of the service revolution. *Research Policy*, *19*(3), 215–237. https://doi.org/10.1016/0048-7333(90)90037-7

Barrett, M., Davidson, E., Prabhu, J., & Vargo, S. L. (2015). Service innovation in the digital age: Key contributions and future directions. *MIS Quarterly: Management Information Systems*, *39*(1), 135–154.

https://doi.org/10.25300/MISQ/2015/39:1.03

Bell, E., Bryman, A., & Harley, B. (2019). *Business research methods*. (5th ed.) Oxford University Press.

Bhaskar, R. (2008). *A Realist Theory of Science* (1st ed.). Routledge. https://doi.org/10.4324/9780203090732

Bhaskar, R. (2010). *Reclaiming reality: A critical introduction to contemporary philosophy* (1st ed.). Routledge. https://doi.org/10.4324/9780203843314

Biemans, W. G., Griffin, A., & Moenaert, R. K. (2016). New service development: How the field developed, its current status and recommendations for moving the field forward. *Journal of Product Innovation Management*, *33*(4), 382–397. https://doi.org/10.1111/jpim.12283

Biemans, W., & Griffin, A. (2018). Innovation practices of B2B manufacturers and service providers: Are they really different? *Industrial Marketing Management*, *75*, 112–124. https://doi.org/10.1016/j.indmarman.2018.04.008

Bitner, M. J., Ostrom, A. L., & Morgan, F. N. (2008). Service blueprinting: A practical technique for service innovation. *California Management Review*, *50*(3), 66–94. https://doi.org/10.2307/41166446

Bracket, T., Dab, S., Kok, S. A., & Peeters, M. (2018). *Retail Banks Must Embrace Open Banking or Be Sidelined*. https://www.bcg.com/publications/2018/retail-banks-must-embrace-open-banking-sidelined

Brax, S. (2005). A manufacturer becoming service provider - Challenges and a paradox. *Managing Service Quality*, *15*(2), 142–155. https://doi.org/10.1108/09604520510585334

Brown, T. (2008). Design thinking. *Harvard Business Review*, *86*(6), 84–92. https://doi.org/10.1145/2535915

Brown, T., & Martin, R. (2015). Design for action. In *Harvard Business Review*. https://doi.org/10.1109/emr.2016.7559061

Bryman, A. (2012). *Social research methods*. Oxford University Press,

Bryson, J., Daniels, P., & Warf, B. (2004). *Service worlds: People, organisations, technologies* (1st ed.). Routledge. https://www.routledge.com/Service-Worlds-People-Organisations-Technologies/Bryson-Daniels-Warf/p/book/9780415247870

Bughin, J., Manyika, J., & Catlin, T. (2019). *Ten insights to get your digitization strategy right*. https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/twenty-five-years-of-digitization-ten-insights-into-how-to-play-it-right

Carlborg, P., Kindström, D., & Kowalkowski, C. (2014). The evolution of service innovation research: A critical review and synthesis. *The Service Industries Journal*, *34*(5), 373–398. https://doi.org/10.1080/02642069.2013.780044

Cenamor, J., Rönnberg Sjödin, D., & Parida, V. (2017). Adopting a platform approach in servitization: Leveraging the value of digitalization. *International Journal of Production Economics*, *192*, 54–65. https://doi.org/10.1016/j.ijpe.2016.12.033

Chesbrough, H. (2006). Open innovation: A new paradigm for understanding industrial innovation. In H. Chesbrough & Vanhaverbeke; W. J. (Eds.), *Open Innovation: Researching a new paradigm* (pp. 1–12). Oxford University Press.

Chesbrough, H. (2011). *Open services innovation: Rethinking your business to grow and compete in a new era*. Wiley.

Chuard, M. (2021). *What open banking needs to become the future of banking*. https://www.weforum.org/agenda/2021/04/open-banking-future-of-finance/

Cimini, C., Adrodegari, F., Paschou, T., Rondini, A., & Pezzotta, G. (2021). Digital servitization and competence development: A case-study research. *CIRP Journal of Manufacturing Science and Technology*, *32*(11), 447–460. https://doi.org/10.1016/j.cirpj.2020.12.005

CompaniesMarketCap. (2022). *Companies ranked by Market Cap*. https://companiesmarketcap.com/

Coombs, R., & Miles, I. (2000). *Innovation, measurement and services: The new problematique* (pp. 85–103). Springer, https://doi.org/10.1007/978-1-4615-4425-8_5

Cooper, R. (1990). New products: What distinguishes the winners? *Research Technology Management*, *33*(6), 27–31.

CSIS. (2021). *Is China a Global Leader in Research and Development?* https://chinapower.csis.org/china-research-and-development-rnd/

Cutolo, D., Hardagon, A., & Kenney, M. (2021). Competing on platforms. *MIT Sloan Management Review*, 62 (3), 22-30.

Czarniawska, B. (2007). *Shadowing and other techniques for doing fieldwork in modern societies*. CBS Press

Den Hertog, P., van der Aa, W., & de Jong, M. W. (2010). Capabilities for managing service innovation: Towards a conceptual framework. *Journal of Service Management*, *21*(4), 490–514. https://doi.org/10.1108/09564231011066123

Dorst, K. (2011). The core of "design thinking" and its application. *Design Studies*, *32*(6). https://doi.org/10.1016/j.destud.2011.07.006

Dotzel, T., & Shankar, V. (2019). The relative effects of business-to-business (vs. business-to-consumer) service innovations on firm value and firm risk: An empirical analysis. *Journal of Marketing*, *83*(5), 133–152. https://doi.org/10.1177/0022242919847221

Dotzel, T., Shankar, V., & Berry, L. L. (2013). Service innovativeness and firm

value. *Journal of Marketing Research*, *50*(2), 259–276. https://doi.org/10.1509/jmr.10.0426

Drejer, I. (2004). Identifying innovation in surveys of services: A Schumpeterian perspective. *Research Policy*, *33*(3), 551–562. https://doi.org/10.1016/j.respol.2003.07.004

Dubois, A., & Gadde, L. E. (2002). Systematic combining: An abductive approach to case research. *Journal of Business Research*, *55*(7). 553-560 https://doi.org/10.1016/S0148-2963(00)00195-8

Durst, S., Mention, A. L., & Poutanen, P. (2015). Service innovation and its impact: What do we know about? *Investigaciones Europeas de Direccion y Economia de La Empresa*, *21*(2), 65–72. https://doi.org/10.1016/j.iedee.2014.07.003

Echeverri, P., & Skålén, P. (2021). Value co-destruction: Review and conceptualization of interactive value formation. *Marketing Theory*, *21*(2), 227–249. https://doi.org/10.1177/1470593120983390

Edvardsson B., Gustafsson A., Kristensson P., Witell L. (2010) Service Innovation and Customer Co-development. In: Maglio P., Kieliszewski C., Spohrer J. (Eds.). *Handbook of Service Science. Service Science: Research and Innovations in the Service Economy*. Springer, https://doi.org/10.1007/978-1-4419-1628-0_24

Edvardsson, B., Kleinaltenkamp, M., Tronvoll, B., McHugh, P., & Windahl, C. (2014). Institutional logics matter when coordinating resource integration. *Marketing Theory*, *14*(3), 291–309. https://doi.org/10.1177/1470593114534343

Edvardsson, B., Tronvoll, B., & Gruber, T. (2011). Expanding understanding of service exchange and value co-creation: A social construction approach. *Journal of the Academy of Marketing Science*, *39*(2), 327–339. https://doi.org/10.1007/s11747-010-0200-y

Eisenhardt, K., & Graebner, M. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, *50*(1), 25–37. https://doi.org/10.2307/20159839

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, *14*(4), 532–550. https://doi.org/10.5465/AMR.1989.4308385

Erlebach, J., Pauly, M., Du Croo De Jongh, L., & Strauss, M. (2020). *The sun is setting on traditional banking*. https://www.bcg.com/publications/2020/bionic-banking-may-be-the-future-of-banking

European Commission. (2007). *Payment services (PSD 1) - Directive 2007/64/EC*. European Union. https://ec.europa.eu/info/law/payment-services-psd-1-directive-2007-64-ec_en

European Commission. (2015). *Payment services (PSD 2) - Directive (EU)*

2015/2366. European Union. https://ec.europa.eu/info/law/payment-services-psd-2-directive-eu-2015-2366_en

Fallman, D. (2008). The interaction design research triangle of design practice, design studies, and design exploration. *Design Issues*, *24*(3). https://doi.org/10.1162/desi.2008.24.3.4

Feng, C., Ma, R., & Jiang, L. (2020). The impact of service innovation on firm performance: A meta-analysis. *Journal of Service Management*, *32*(3), 289–314. https://doi.org/10.1108/JOSM-03-2019-0089

Flikkema, M., Jansen, P., & Van Der Sluis, L. (2007). Identifying neo-Schumpeterian innovation in service firms: A conceptual essay with a novel classification. *Economics of Innovation and New Technology*, *16*(7), 541–558. https://doi.org/10.1080/10438590600918602

Flyvberg, B. (2011). Case Study. In N. K. Denzin & Y. S. Lincoln (Eds.), *The sage handbook of qualitative research* (pp. 301–316).

Friedman, K. (2003). Theory construction in design research criteria: Approaches and methods. *Design Studies*, *24*(6), 507-522. https://doi.org/10.1016/S0142-694X(03)00039-5

Fung, K. C., Iizaka, H., & Tong, S. Y. (2004). Foreign direct investment in China: Policy, recent trend and impact. *Global Economic Review*, *33*(2), 99–130. https://doi.org/10.1080/12265080408449850

Gallouj, F. (2002). *Innovation in the service economy – The new wealth of nations*. Edward Elgar Publishing. https://doi.org/10.4337/9781843765370

Gallouj, F., & Savona, M. (2009). Innovation in services: A review of the debate and a research agenda. *Journal of Evolutionary Economics*, *19*(2), 149–172. https://doi.org/10.1007/s00191-008-0126-4

Gallouj, F., & Weinstein, O. (1997). Innovation in services. *Research Policy*, *26*(4–5), 537–556. https://doi.org/10.1016/S0048-7333(97)00030-9

Gandhi, P., Khanna, S., & Ramaswamy, S. (2016). Which industries are the most digital (and why)? *Harvard Business Review*, April. https://hbr.org/2016/04/a-chart-that-shows-which-industries-are-the-most-digital-and-why

Gebauer, H., Fleisch, E., & Friedli, T. (2005). Overcoming the service paradox in manufacturing companies. *European Management Journal*, *23*(1), 14–26. https://doi.org/10.1016/j.emj.2004.12.006

Gebauer, H., Fleisch, E., Lamprecht, C., & Wortmann, F. (2020). Growth paths for overcoming the digitalization paradox. *Business Horizons*, *63*(3), 313–323. https://doi.org/10.1016/j.bushor.2020.01.005

Gebauer, H., Ren, G. J., Valtakoski, A., & Reynoso, J. (2012). Service-driven manufacturing: Provision, evolution and financial impact of services in industrial firms. *Journal of Service Management*, *23*(1), 120–136. https://doi.org/10.1108/09564231211209005

George, A., & Bennett, A. (2005). Case studies and theory development. *Case Studies and Theory Development in the Social Sciences*, MIT Press.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research. *Organizational Research Methods*, *16*(1). 15-31 https://doi.org/10.1177/1094428112452151

Glaser, B., & Strauss, A. (1967). Applying grounded theory. The discovery of grounded theory: Strategies of qualitative research. *The Grounded Theory Review*, *13*(1).

Glock, C. Y., Kahn, R. L., & Cannell, C. F. (1957). The dynamics of interviewing: Theory, technique, and cases. *American Sociological Review*, *22*(6), 761-762. https://doi.org/10.2307/2089209

Goffin, K., Beznosov, A., & Seiler, M. (2021). Countering commoditization through innovation challenges for European B2B companies. *Research-Technology Management*, *64*(4), 20–28. https://doi.org/10.1080/08956308.2021.1908721

Gummesson, E. (1987). Lip service – a neglected area in services marketing. *Journal of Services Marketing*, *1*(1), 19–23. https://doi.org/10.1108/eb059585

Gummesson, E., & Mele, C. (2010). Marketing as value co-creation through network interaction and resource integration. *Journal of Business Market Management*, *4*(4), 181–198. https://doi.org/10.1007/s12087-010-0044-2

Gustafsson, A., Snyder, H., & Witell, L. (2020). Service innovation: A new conceptualization and path forward. *Journal of Service Research*, *23*(2), 111–115. https://doi.org/10.1177/1094670520908929

Indermit, G. (2021, January). *At your service? Developing economies bet on service industries for growth*. World Bank Blogs. https://blogs.worldbank.org/voices/your-service-developing-economies-bet-service-industries-growth

Kamalaldin, A., Linde, L., Sjödin, D., & Parida, V. (2020). Transforming provider-customer relationships in digital servitization: A relational view on digitalization. *Industrial Marketing Management*, *89*, 306-325. https://doi.org/10.1016/j.indmarman.2020.02.004

King, N., & Brooks, J. M. (2018). Template Analysis for Business and Management Students. SAGE Publications. https://doi.org/10.4135/9781473983304

Koskela-Huotari, K., Edvardsson, B., Jonas, J. M., Sörhammar, D., & Witell, L. (2016). Innovation in service ecosystems – Breaking, making, and maintaining institutionalized rules of resource integration. *Journal of Business Research*, *69*(8), 2964–2971. https://doi.org/10.1016/j.jbusres.2016.02.029

Kowalkowski, C., Gebauer, H., Kamp, B., & Parry, G. (2017). Servitization and deservitization: Overview, concepts, and definitions. *Industrial Marketing Management*, *60*, 4–10. https://doi.org/10.1016/j.indmarman.2016.12.007

Kumar, N., & Ganguly, K. K. (2020). External diffusion of B2B e-procurement and

firm financial performance: Role of information transparency and supply chain coordination. *Journal of Enterprise Information Management*, *34*(4), 1037–1060. https://doi.org/10.1108/JEIM-02-2020-0060

Laud, G., Bove, L., Ranaweera, C., Leo, W. W. C., Sweeney, J., & Smith, S. (2019). Value co-destruction: A typology of resource misintegration manifestations. *Journal of Services Marketing*, *31*(7), 866–889. https://doi.org/10.1108/JSM-01-2019-0022

Lenka, S., Parida, V., & Wincent, J. (2017). Digitalization capabilities as enablers of value co-creation in servitizing firms. *Psychology & Marketing*, *34*(1), 92–100. https://doi.org/10.1002/mar.20975

Lilien, G. L. (2016). The B2B Knowledge Gap. *International Journal of Research in Marketing*, *33*(3), 543–556. https://doi.org/10.1016/j.ijresmar.2016.01.003

Lingqvist, O., Lun Plotkin, C., & Stanley, J. (2015). *Do you really understand how your business customers buy?.* McKinsey. https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/do-you-really-understand-how-your-business-customers-buy

Luoto, S., Brax, S. A., & Kohtamäki, M. (2017). Critical meta-analysis of servitization research: Constructing a model-narrative to reveal paradigmatic assumptions. *Industrial Marketing Management*, *60*, 89–100. https://doi.org/10.1016/j.indmarman.2016.04.008

Lusch, R. (2011). Reframing supply chain management: A service-dominant logic perspective. *Journal of Supply Chain Management*, *47*(1), 14–18. https://doi.org/10.1111/j.1745-493X.2010.03211.x

Lusch, R. F., & Nambisan, S. (2015). Service innovation: A service-dominant logic perspective. *MIS Quarterly*, *39*(1), 155–175. https://doi.org/10.25300/MISQ/2015/39.1.07

Lusch, R. F., & Vargo, S. L. (2006). *The service-dominant logic of marketing: Dialog, debate, and directions*. Taylor and Francis. https://doi.org/10.4324/9781315699035

Lusch, R. F., & Vargo, S. L. (2018). An overview of service-dominant logic. In *The SAGE Handbook of Service-Dominant Logic,* Lusch, R. F., & Vargo, S. L. (Eds.) (pp. 3–21). SAGE Publications Ltd. https://doi.org/10.4135/9781526470355.n1

Lusch, R. F., Vargo, S. L., & Tanniru, M. (2010). Service, value networks and learning. *Journal of the Academy of Marketing Science*, *38*(1), 19–31. https://doi.org/10.1007/s11747-008-0131-z

Macaulay, L. A., Miles, I., Wilby, J., Leng Tan, Y., Zhao, L., & Theodoulidis, B. (2012). *Case Studies in Service Innovation* (L. A. Macaulay, I. Miles, J. Wilby, Y. L. Tan, L. Zhao, & B. Theodoulidis (Eds.)). Springer. https://doi.org/10.1007/978-1-4614-1972-3

Mallick, A., McIntyre, A., & Scott, E. (2016). *Catching the open banking wave*. https://www.accenture.com/dk-en/insights/banking/open-banking-moving-towards-open-data-economy

Marshall, C., & Rossman, G. B. (2016). *Designing qualitative research*. Sage Publications.

Miles, I. (1993). Services in the new industrial economy. *Futures*, *25*(6), 653–672. https://doi.org/10.1016/0016-3287(93)90106-4

Miles, I. (2001). Services innovation: A reconfiguration of innovation studies. *PREST Discussion Paper Series (No.01-05)*. https://www.researchgate.net/publication/235407868_Services_Innovation_A_Reconfiguration_of_Innovation_Studies

Miles, I. (2008). Patterns of innovation in service industries. *IBM Systems Journal*, *47*(1), 115–128. https://doi.org/10.1147/sj.471.0115

Miles, I. (2012). Introduction to Service Innovation. In L. A. Macaulay, I. Miles, J. Wilby, Y. Leng Tan, L. Zhao, & B. Theodoulidis (Eds.), *Case Studies in Service Innovation* (pp. 1–15). Springer. https://doi.org/10.1007/978-1-4614-1972-3_1

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). Qualitative data anlaysis: A method sourcebook. SAGE Publication, Inc.

Moeller, S. (2008). Customer integration—A key to an implementation perspective of service provision. *Journal of Service Research*, *11*(2), 197–210. https://doi.org/10.1177/1094670508324677

Möller, K., Rajala, R., & Westerlund, M. (2008). Service innovation myopia? A new recipe for client-provider value creation. *California Management Review*, *50*(3), 31–48. https://doi.org/10.2307/41166444

Mora Cortez, R., & Johnston, W. J. (2017). The future of B2B marketing theory: A historical and prospective analysis. *Industrial Marketing Management*, *66*, 90–102. https://doi.org/10.1016/j.indmarman.2017.07.017

Mustak, M., & Plé, L. (2020). A critical analysis of service ecosystems research: Rethinking its premises to move forward. *Journal of Services Marketing*, *34*(3), 399–413. https://doi.org/10.1108/JSM-02-2019-0084

Nambisan, S., Lyytinen, K., Majchrzak, A., & Song, M. (2017). Digital innovation management: Reinventing innovation management research in a digital world. *MIS Quarterly*, *41*(1), 223–238. https://doi.org/10.25300/misq/2017/41:1.03

Nardelli, G. (2017). Innovation dialectics: An extended process perspective on innovation in services. *Service Industries Journal*, *37*(1), 31–56. https://doi.org/10.1080/02642069.2017.1289513

Norman, R. (2001). *Reframing business: When the map changes the landscape*. Wiley.

North, D. C. (1990). Institutions, institutional change and economic performance. In *Institutions, Institutional Change and Economic Performance*. https://doi.org/10.1017/cbo9780511808678

Ordanini, A., & Parasuraman, A. (2011). Service innovation viewed through a service-dominant logic lens: A conceptual framework and empirical analysis. *Journal of Service Research*, *14*(1), 3–23. https://doi.org/10.1177/1094670510385332

Orlikowski, W. J. (1992). The duality of technology: Rethinking the concept of technology in organizations. *Organization Science*, *3*(3), 398–427. https://www.jstor.org/stable/2635280?seq=1#metadata_info_tab_contents

Ostrom, A. L., Bitner, M. J., Brown, S. W., Burkhard, K. A., Goul, M., Smith-Daniels, V., Demirkan, H., Rabinovich, E., Ostrom, A. L., Bitner, M. J., Brown, S. W., Burkhard, K. A., Goul, M., Smith-Daniels, V., Demirkan, H., & Rabinovich, E. (2010). Moving forward and making a difference: Research priorities for the science of service. *Journal of Service Research*, *13*(1), 4–36. https://doi.org/10.1177/1094670509357611

Ostrom, A. L., Field, J. M., Fotheringham, D., Subramony, M., Gustafsson, A., Lemon, K. N., Huang, M.-H., & McColl-Kennedy, J. R. (2021). Service research priorities: Managing and delivering service in turbulent times. *Journal of Service Research*, *24*(3), 329–353. https://doi.org/10.1177/10946705211021915

Ostrom, A. L., Parasuraman, A., Bowen, D. E., Patrício, L., & Voss, C. A. (2015). Service Research Priorities in a Rapidly Changing Context. *Journal of Service Research*, *18*(2), 127–159. https://doi.org/10.1177/1094670515576315

Parida, V., Sjödin, D., & Reim, W. (2019). Reviewing literature on digitalization, business model innovation, and sustainable industry: Past achievements and future promises. *Sustainability*, *11*(2), 391. https://doi.org/10.3390/su11020391

Paschou, T., Rapaccini, M., Adrodegari, F., & Saccani, N. (2020). Digital servitization in manufacturing: A systematic literature review and research agenda. *Industrial Marketing Management*, *89*, 278–292. https://doi.org/10.1016/j.indmarman.2020.02.012

Patrício, L., Gustafsson, A., & Fisk, R. (2018). Upframing service design and innovation for research impact. In *Journal of Service Research*. https://doi.org/10.1177/1094670517746780

Pine, B. J. (2015). How B2B companies create economic value by designing experiences and transformations for their customers. *Strategy and Leadership*, *43*(3), 2–6. https://doi.org/10.1108/SL-03-2015-0018

Plé, L. (2017). Why do we need research on value co-destruction? *Journal of Creating Value*, *3*(2), 162–169. https://doi.org/10.1177/2394964317726451

Porter, M. (1998). *The competitive advantage: Creating and sustaining superior*

performance. Free Press.

Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing*, *18*(3), 5–14. https://doi.org/10.1002/dir.20015

Raddats, C., Kowalkowski, C., Benedettini, O., Burton, J., & Gebauer, H. (2019). Servitization: A contemporary thematic review of four major research streams. *Industrial Marketing Management*, *83*, 207–223. https://doi.org/10.1016/j.indmarman.2019.03.015

Randhawa, K., & Scerri, M. (2015). Service innovation: A review of the literature. In: Agarwal R., Selen W., Roos G., Green R. (eds) *The Handbook of Service Innovation* (pp. 27–52). Springer. https://doi.org/10.1007/978-1-4471-6590-3_2

Read, S., Dew, N., Sarasvathy, S. D., Song, M., & Wiltbank, R. (2009). Marketing under uncertainty: The logic of an effectual approach. *Journal of Marketing*, *73*(3), 1–18. https://doi.org/10.1509/jmkg.73.3.1

Reed, M. (2005). Reflections on the "realist turn" in organization and management studies. In *Journal of Management Studies* (Vol. 42, Issue 8). https://doi.org/10.1111/j.1467-6486.2005.00559.x

Reim, W., Sjödin, D. R., & Parida, V. (2019). Servitization of global service network actors – A contingency framework for matching challenges and strategies in service transition. *Journal of Business Research*, *104*, 461-471 https://doi.org/10.1016/j.jbusres.2019.01.032

Ritchie, J., Spencer, L., & O'Connor, W. (2003). Carrying out Qualitative Analysis. In *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. SAGE Publications Ltd.

Rosenbaum, M. S., Otalora, M. L., & Ramírez, G. C. (2017). How to create a realistic customer journey map. *Business Horizons*, *60*(1), 143–150. https://doi.org/10.1016/j.bushor.2016.09.010

Rust, R. T., & Huang, M. H. (2014). The service revolution and the transformation of marketing science. *Marketing Science*, *33*(2), 206–221. https://doi.org/10.1287/mksc.2013.0836

Sampson, S. E. (2007). *(Why we need) An operations paradigm for services*. POMS - College of Services.

Sampson, S. E., & Spring, M. (2012). Customer roles in service supply chains and opportunities for innovation. *Journal of Supply Chain Management*, *48*(4), 30–50. https://doi.org/10.1111/j.1745-493X.2012.03282.x

Sandén, B., Gustafsson, A., & Witell, L. (2006). *The role of the customer in the development process*. In Edvardsson, B., Gustafsem, A., Kristensson, P., Magnusson, P., Matthing, J. (Eds.) Involving customers in new service development (pp. 33–56). https://doi.org/10.1142/9781860948893_0003

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. Pearson Education.

Saunders, M., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* Pearson Education.

Sawhney, M., Wolcott, R. C., & Arroniz, I. (2006). The 12 different ways for companies to innovate. In *MIT Sloan Management Review*, *47*(3), 75-81. https://doi.org/10.1109/emr.2007.329139

Scott, W. R. (2008). Institutions and organizations: Ideas and interests. In *Institutions and Organizations: Ideas and Interests*.

Shih, W. (2018). Why high-tech commoditization is accelerating. *MIT Sloan Management Review*, *59*(4), 53–58.

Sinkovics, N. (2016). Enhancing the foundations for theorising through bibliometric mapping. *International Marketing Review*, *33*(3). https://doi.org/10.1108/IMR-10-2014-0341

Slepniov, D., Wæhrens, B. V., & Johansen, J. (2014). Servitisation in Danish manufacturing firms: A strategy for survival? In D. Slepniov, B. V. Wæhrens, & J. Johansen (Eds.), *Global Operations Networks: Exploring New Perspectives and Agendas* (pp. 183–202). Aalborg Universitetsforlag.

Spohrer, J., & Maglio, P. P. (2008). The emergence of service science: Toward systematic service innovations to accelerate co-creation of value. *Production and Operations Management*, *17*(3), 238–246. https://doi.org/10.3401/poms.1080.0027

Stickdorn, M., Lawrence, A., Hormess, M., & Schneider, J. (2018). This is service design doing - applying service design thinking in the real world – A practitioners handbook. In *This is Service Design Doing*. O'Reilly Media, Inc.

Storey, C., Cankurtaran, P., Papastathopoulou, P., & Hultink, E. J. (2016). Success factors for service innovation: A meta-analysis. *Journal of Product Innovation Management*, *33*(5), 527–548. https://doi.org/10.1111/jpim.12307

Suddaby, R. (2006). From the editors: What grounded theory is not. *Academy of Management Journal*, *49*(4), 633–642. https://doi.org/10.5465/AMJ.2006.22083020

The White House. (2021). *Executive Order on Promoting Competition in the American Economy*. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/

Toivonen, M., & Tuominen, T. (2009). Emergence of innovations in services. *The Service Industries Journal*, *29*(7), 887–902. https://doi.org/10.1080/02642060902749492

Van Aken, J. E. (2004). Management research based on the paradigm of the design sciences: The quest for field-tested and grounded technological rules. *Journal*

of Management Studies, *41*(2). https://doi.org/10.1111/j.1467-6486.2004.00430.x

Van Maanen, J., Sørensen, J. B., & Mitchell, T. R. (2007). The interplay between theory and method. *Academy of Management Review*, *32*(4), 1145–1154. https://doi.org/10.5465/AMR.2007.26586080

Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, *68*(1), 1–17. https://doi.org/10.1509/jmkg.68.1.1.24036

Vargo, S. L., & Lusch, R. F. (2011). It's all B2B...and beyond: Toward a systems perspective of the market. *Industrial Marketing Management*, *40*(2), 181–187. https://doi.org/10.1016/j.indmarman.2010.06.026

Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: An extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, *44*(1), 5–23. https://doi.org/10.1007/s11747-015-0456-3

Vargo, S. L., Maglio, P. P., & Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European Management Journal*, *26*(3), 145–152. https://doi.org/10.1016/j.emj.2008.04.003

Verma, R., Gustafsson, A., Gustafsson, A., Kristensson, P., & Witell, L. (2012). Customer co-creation in service innovation: A matter of communication? *Journal of Service Management*, *23*(3), 311–327. https://doi.org/10.1108/09564231211248426

Von Nordenflycht, A. (2010). What is a professional service firm? Toward a theory and taxonomy of knowledge-intensive firms. *Academy of Management Review*, *35*(1), 155–174. https://doi.org/10.5465/AMR.2010.45577926

Walsham, G., & Han, C. K. (1991). Structuration Theory and Information Systems Research. *Journal of Applied Systems Analysis*, *18*, 77–85.

Wiersema, F. (2013). The B2B Agenda: The current state of B2B marketing and a look ahead. *Industrial Marketing Management*, *42*(4), 470–488 https://doi.org/10.1016/j.indmarman.2013.02.015

Witell, L., Snyder, H., Gustafsson, A., Fombelle, P., & Kristensson, P. (2016). Defining service innovation: A review and synthesis. *Journal of Business Research*, *69*(8), 2863–2872. https://doi.org/10.1016/j.jbusres.2015.12.055

World Bank. (2022). *Services, value added (% of GDP)* . https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS?most_recent_value_desc=true

Xin, E. (2018). *How China's open banking experiment is unfolding*. https://www.ey.com/en_dk/banking-capital-markets/how-chinas-open-banking-experiment-is-unfolding

Yin, R. K. (2018). *Case study research and application – Design and methods*. SAGE Publications Inc.

Yiu, S., & Mercer, S. (2014). *MNCs in China – Making the right moves*. https://assets.kpmg/content/dam/kpmg/pdf/2015/08/MNCs-in-China-201409.pdf

Yu, E., & Sangiorgi, D. (2018). Service design as an approach to implement the value cocreation perspective in new service development. *Journal of Service Research*, *21*(1), 40–58. https://doi.org/10.1177/1094670517709356

Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, *18*(3). https://doi.org/10.1177/1094428114562629

CHAPTER 6. B2B SERVICE INNOVATION AND WHAT WE KNOW ABOUT IT: A SYSTEMATIC LITERATURE REVIEW[2]

Struwe, Sascha and Slepniov, Dmitrij

Aalborg University Business School (AAUBS), Denmark

Sino-Danish College (SDC), University of Chinese Academy of Sciences (UCAS), China

Abstract

Services have long overtaken products as significant contributors to national GDP in most developed nations, yet the literature remains biased towards product innovation. Much of the existing service innovation literature primarily focuses on business-to-consumer (B2C) services, leaving nuances and peculiarities of business-to-business (B2B) services and how they are innovated unaddressed. This study sets out to bridge this gap by exploring the state-of-the-art of B2B service innovation in the literature. The study conducts a systematic literature review, identifying 54 articles on B2B service innovation concepts. A descriptive and thematic analysis of the articles reveals limitations and gaps. The review provides an overview of the characteristics of the B2B service innovation literature and synthesises its underlying concepts. The study shows that the B2B service innovation literature is fragmented and incohesive, preventing theoretical development. As a result, the current understanding of how B2B service innovation takes place and can be better managed remains limited. The study contributes to B2B service innovation literature by providing descriptive insights to the field and investigating the underlying concepts of B2B service innovation, proposing mechanisms as an appropriate concept for future theorising, and future research directions.

Keywords: Service Innovation, Concepts, Business-to-Business (B2B), Systematic Literature Review

[2] This article has been submitted to the Journal of Service Management

6.1. INTRODUCTION

Services represent the most significant contributor to GDP in developed nations and increasingly in nations moving further up the value chain (The World Bank, 2021). As a result, services have become essential across firms and markets (Ostrom et al., 2015), and service innovation (SI), *"the exploitation of an idea for a service that is new to the firm and intended to provide its customers new benefits"* (Dotzel & Shankar, 2019), has become the primary source of growth, value creation, and competitive advantage (Biemans & Griffin, 2018; Feng et al., 2020; Kowalkowski et al., 2017).

In what appears to be failure to recognise the importance of services, the innovation literature is characterised by a bias towards product innovation (PI) (Biemans & Griffin, 2018; Storey et al., 2016). However, this limitation has not gone unnoticed, and SI research has been receiving increasing attention from scholars (Biemans et al., 2016). For example, studies have explored multiple SI concepts: processes (Aarikka-Stenroos & Jaakkola, 2012; Brax & Jonsson, 2009; Gottfridsson, 2010; Kindström & Kowalkowski, 2009), success factors (Goduscheit & Faullant, 2018; de Brentani et al., 2001; Neu & Brown, 2005), practices (Biemans & Griffin, 2018; Enders et al., 2020; Hein et al., 2019), mechanisms (Colm et al., 2020; Hong & Miyazaki, 2013; Lenka et al., 2017; Nardelli, 2017), methodologies (Almefelt et al., 2009; Lima et al., 2018; Rexfelt et al., 2011), models (Baidouri et al., 2012; Santos & Spring, 2013; Warren & Davies, 2013), and organisational capabilities (Coreynen et al., 2017; den Hertog et al., 2010; Kindström et al., 2013).

Despite this growth in studies, SI research and understanding remain fragmented (Biemans et al., 2016; Snyder et al., 2016; Storey et al., 2016). Thus, it may not be surprising that most SIs do not perform well or fail (Christensen, 2016; Gebauer et al., 2005, 2020; Storey & Hughes, 2013). This challenge may be associated with attempts to apply PI concepts to SI (Biemans et al., 2016; Storey et al., 2016), neglecting the unique characteristics of services and their respective implications for innovation (Berry et al., 2006; Droege et al., 2009; Edvardsson et al., 2005). However, perhaps more importantly, the SI literature is characterised by a general lack of guidance and explainability (Biemans et al., 2016; Biemans & Griffin, 2018; Ostrom et al., 2010, 2015).

This issue is particularly important for business-to-business (B2B) firms, especially when considering that B2B markets make up the most significant share of all markets in terms of overall revenue (Dotzel & Shankar, 2019; Vargo & Lusch, 2011). Moreover, an ever-increasing number of B2B firms are becoming service-dominant (e.g. Xerox, Rolls Royce, John Deere, Caterpillar, or Alstom) (Baines et al., 2017; Vargo & Lusch, 2008, 2016). Thus, more and more firms rely on B2B-SI—*"the exploitation of an idea for a service that is new to the firm and intended to provide its business customers new benefits"* (Dotzel & Shankar, 2019)—for growth, value

creation, and competitive advantage. In fact, a recent survey of more than 7,000 B2B customers shows that 63% of customers expect new service more frequently (Salesforce Research, 2018). Therefore, academics and practitioners alike need to better understand how B2B-SI can be achieved to deploy resources effectively.

This study explores B2B-SI and its underlying concepts through a systematic literature review, following Denyer and Tranfield (2009)'s five-step approach. The basis of this review is 54 articles on B2B-SI published between 2000 and 2020. Moreover, the review takes a cross-disciplinary approach, including various disciplines, e.g. management, marketing, or information technologies. The literature analysis is in two ways: 1) descriptively utilising R-tool Bibliometrix (Aria & Cuccurullo, 2017) and Excel-based data processing, and 2) qualitatively using a thematic approach (King & Brooks, 2018).

This study contributes to the continuous debate about how to guide B2B-SI efforts by answering the following research questions: 1) How can B2B-SI be achieved? and 2) What are the underlying concepts that inform B2B-SI? The study believes that a fundamental issue in the current B2B-SI literature is the lack of a coherent body of knowledge limiting our understanding of which concepts inform B2B-SI and what insights they provide for successful B2B-SI. In reviewing the recent B2B-SI literature, this review aims to enhance our understanding of what characterises the field of B2B-SI research in terms of features, such as applied methodologies and theories, provide an overview of B2B-SI concepts and their insights, and propose paths for future research.

The review is structured as follows. First, we introduce the research questions and describe how the studies were located, selected, and analysed. Second, we present results of the literature providing general insights into the B2B-SI research stream, e.g. scientific production, applied methodologies, and theories, as well as the state of the art of how B2B-SI can be achieved. Third, we discuss the central issues of how B2B-SI can be achieved and highlight avenues for future research. Lastly, we conclude the study by emphasising theoretical and managerial implications and pointing out the study's limitations.

6.2. METHODOLOGY

This study's approach is based on Denyer and Tranfield's (2009) suggested steps for systematic literature reviews. Accordingly, the review followed the following steps: (1) formulate research question(s) (see Section 6.1), (2) locate relevant studies, (3) study selection and evaluation based on appropriate criteria, (4) analyse and synthesise, and (5) report and use results (see Section 6.3 and 6.4).

6.2.1. LOCATE RELEVANT STUDIES

Scopus and Web of Sciences were chosen as the primary databases for article retrieval based on their wide recognition. We systematically approached the matter through brainstorming, dictionary searches, and discussions with colleagues to identify relevant keywords for search strings. Our initial investigation and other scholars (e.g. Carlborg et al., 2014; Snyder et al., 2016; Witell et al., 2016) made us aware of an unsharp definition of SI, which is why we developed a list of the most commonly and interchangeably used constructs: service innovation, service design, new service development, and servitisation.

Furthermore, to identify B2B-SI concepts, we learned that a wide variety of explanatory terms were necessary to capture the relevant literature. We searched with the following terms: mechanism, procedure, process, practice, and factor. Moreover, to specify the context of B2B, we applied the following synonyms: B2B, business to business, and business-to-business. Lastly, the database search was executed based on the article title, abstract, and keywords.

Table 8: Overview of the Search Approach and Its Results

Database	Search Strings	Selection Criteria	Results
Scopus	("Service* Innovation" OR "Service Design" OR "New Service Development" OR "Innovation in Service*" OR "Servitization") AND TITLE-ABS-KEY ("Mechanism*" OR "Procedure*" OR "Process*" OR "Practice*" OR "Factor*") AND TITLE-ABS-KEY ("B2B" OR "Business to Business" OR "Business-to-Business")	Subject Area: No limitation Source Type: Articles, Reviews, Books, Book Chapters, Conference Proceedings/Proceeding Year: 2000–2020 Language: English	85
Web of Science	TOPIC: ("Service* Innovation" OR "Service Design" OR "New service development" OR "Innovation in Service*" OR "Servitization") AND TOPIC: ("Mechanism*" OR "Procedure*" OR "Process*" OR "Practice*" OR "Factor*") AND TOPIC: ("B2B" OR "Business to Business" OR "Business-to-Business")	Subject Area: No limitation Source Type: Articles, Reviews, Books, Book Chapters, Conference Proceedings/Proceeding Year: 2000–2020 Language: English	50
Snowballing			80

As for the inclusion and exclusion criteria, we approached the matter as follows. First, we decided against limiting the subject area to a specific field, such as business and management. We did this because of the open nature of SI. As the SI literature shows,

the variety of contributing disciplines is manifold. For instance, management, marketing, operation, information, or design science is most prominent. We believe approaching the search more openly contributed to a more unified inquiry, answering calls for cross-disciplinary research (e.g. Ostrom et al., 2015). Second, we followed Denyer and Tranfield's (2009) suggestion against limiting the source types too narrowly. They argue that to increase the review's exhaustiveness, searches should include a variety of evidence sources. Thus, we included articles, reviews, books, book chapters, and conference proceedings.

The review focused on literature published between 2000 and 2020. We did this to capture a recent picture of the B2B-SI literature, given its fast-moving nature. This period is characterised by the increasing acknowledgement of contemporary views of SI, such as the synthesis perspective, service-dominant logic, and service eco-systems, which may be particularly relevant for theoretical developments (Carlborg et al., 2014; Gustafsson et al., 2020; Snyder et al., 2016; Witell et al., 2016). The literature was retrieved from the electronic databases on 13 August 2020, focusing on English contributions only.

6.2.2. LITERATURE SELECTION AND EVALUATION

We identified 85 references in the Scopus database and 50 references in the Web of Sciences database, resulting in 135 initial references. These references were exported from the respective databases and imported into Mendeley's reference management software. Checking for duplicates, we ended up working with 89 references for further processing. After that, we evaluated the references based on their titles and abstracts, which led to 50 relevant references. Based on these references, we initiated a snowballing process. We first sorted these references by highest citation to screen for the 20 most cited references. This process was completed on 17 August 2020 and resulted in 80 references. Like the initial Scopus and Web of Science references, we checked for duplicates and evaluated them based on the title and abstract. Summing up all Scopus, Web of Science, and Snowballing references resulted in a total of 69 references. After completing the reading process, 54 references were considered relevant for answering the research questions.

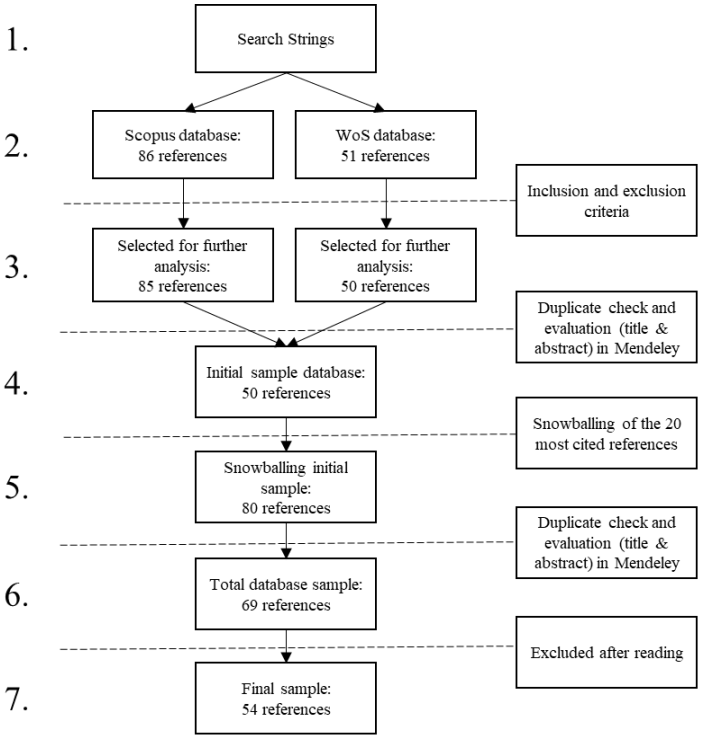


Figure 3: PRISMA Diagram Systematic Literature Review (based on Liberati et al., 2009)

6.2.3. APPROACH TO LITERATURE ANALYSIS AND SYNTHESIS

The following section provides an overview of how we approached the literature analysis both descriptively and qualitatively.

6.2.3.1 Descriptive analysis

The descriptive analysis followed a two-way approach. First, we conducted a bibliometric analysis of the studies using the R-tool Bibliometrix by Aria and Cuccurullo (2017). Bibliometrix represents a web application that can be accessed with no prior coding experience. Using a bibliometric approach, we rigorously and objectively evaluated and mapped the literature (Sinkovics, 2016). Please note that given the data format preferences of Bibliometrix, we were unable to include the total number of identified review articles in the analysis. Bibliometrix prefers Web of Science data to Scopus data because Scopus does not standardise reference metadata, complicating bibliometric analysis. Given the focus on Web of Science data, we could

retrieve 51 of the 54 article references included in our review. In addition to the bibliometric analysis, we analysed the data using Excel to create an overview of essential aspects, such as applied methodologies and theories, which were not possible to discover using Bibliometrix alone.

6.2.3.2 Qualitative analysis

Given the objective of identifying B2B-SI concepts, deriving explanatory insights, and providing future research directions, we utilised a thematic analysis approach of the collected literature. Thematic analysis is instrumental if the study aims to explore patterns in rich qualitative data sets such as literature review articles by providing a balance of structure and flexibility during the analysis (Braun & Clarke 2013; King & Brooks 2019). It enables the researcher to carve out the most significant features related to the research topic, making it more accessible for a wider audience.

We apply thematic template analysis as King & Brooks (2017) proposed. They suggest that the analysis process entails two main steps: "defining themes" and "organising themes" (King & Brooks, 2017). Consequently, we started the analysis by defining a preliminary coding template informed by initial insights gained from the data collection. We coded each article separately based on this preliminary template, subsequently sharpening the template with each article. In this process, we became familiar with the data through reading and highlighting every textual section that appeared relevant to our purpose. In addition, we created memos or annotations when necessary and added preliminary titles summarising the content. Once this preliminary coding was completed, we processed the insights from each article within a common platform. For this purpose, Miro, a web application whiteboard tool, was chosen, enabling us to bring all codes together, supporting the emergence of themes through clustering. In doing so, we engaged in an iterative process of grouping preliminary codes and themes, removing redundant ones, and defining the remaining ones more clearly. Each iteration contributed to more meaningful clusters until we were confident that we had identified a suitable data representation (King & Brooks, 2019).

6.3. ANALYSIS

The following section provides insights into the essence of the descriptive and qualitative analyses of the B2B-SI literature.

6.3.1. DESCRIPTIVE ANALYSIS

6.3.1.1 Annual scientific production

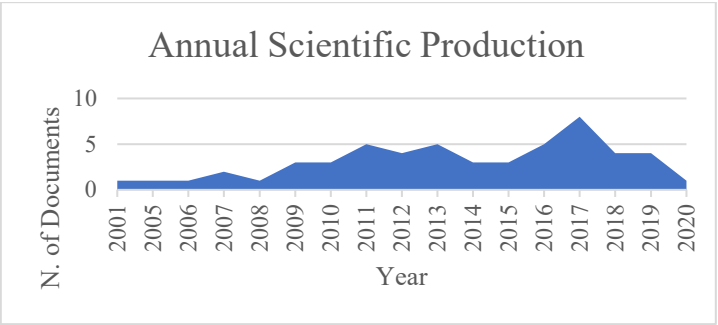


Figure 4: Annual Scientific Production

An analysis of the annual scientific production of the B2B-SI literature shows that 2007 represents the first turning point. The stream established its first high, experienced a short consolidation, and reached a new peak between 2011 and 2013. After a dip of two years, the stream once again moved on to reach its highest peak in 2017, producing eight articles. Lastly, ever since its latest peak, the number of annual contributions has been decreasing.

6.3.1.2 Source analysis

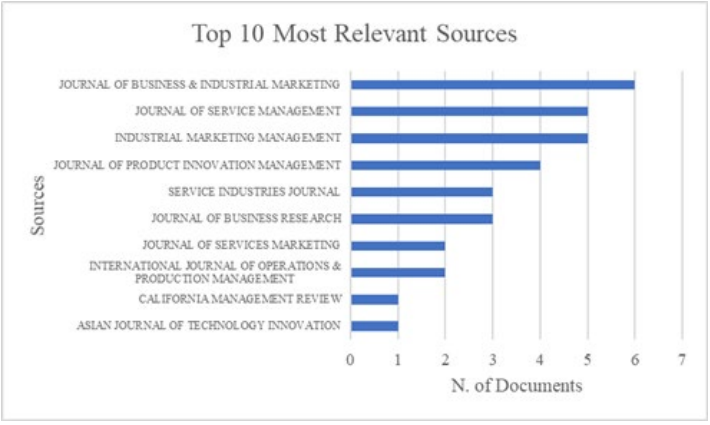


Figure 5: Top 10 Most Relevant Sources

The source analysis (see Figure 5) reveals that management and marketing journals are dominant among the top 10 most relevant journal sources. Applying Bradford's law, four out of 32 journals are representative of one-third of all publications. These journals are the *Journal of Business and Industrial Marketing*, *Industrial Marketing Management*, *Journal of Service Management*, and *Journal of Product Innovation Management*. Besides, 8 out of 32 journals are representative of 56% of all publications and stand for journals with more than one publication. The average H-index score of these eight journals is 113,5 (SCImago – 06 August 2021), with the *Journal of Business Research* having the highest score (195) and the *Journal of Service Management* the lowest (60). Lastly, analysing the source dynamics (see Figure 6) reveals two additional insights about the sources. First, the *Journal of Product Innovation Management* was the first journal to publish B2B-SI-related research repeatedly. Second, the number of journals that contribute to the field is growing. However, publishing in this stream of research remains a sporadic exercise, with no more than two publications for most journals.

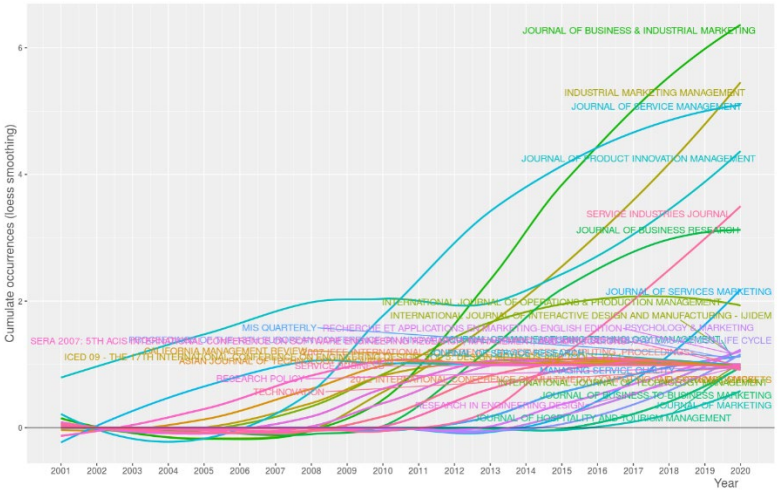


Figure 6: Source Dynamics

6.3.1.3 Author analysis—corresponding author country

The analysis of the top 10 corresponding author countries discloses insights into the origin of B2B-SI research. We find that 74% of contributions come from European countries. In decreasing order, these are: 1) Sweden, 2) Finland, 4) the United Kingdom, 5) Germany, 6) the Netherlands, 8) France, and 9) Denmark. Only 3) the United States, 7) Korea, and 10) China are among the non-European contributors in the top 10. We also find that most contributions are single-country contributions. The data shows that non-European contributions are significantly less engaged in international collaborations than European ones.

6.3.1.4 Frequency of critical parameters

Apart from the bibliometric analysis of the dataset, we also utilised simple counting methods while reading the articles to grasp the essential information of our dataset covering contextual, theoretical, and methodological information.

Dataset origin

Analysing the methodology sections of the articles, we identified the top 10 origins of the datasets utilised within the studies. These are: 1) Sweden, 2) the UK, 3) Finland, 4) Germany, 5) Scandinavia, 6) the USA, 7) Denmark, 8) France, 9) South Korea, and 10) Germany and the UK. Lastly, the data shows that Nordic countries (e.g. Denmark, Finland, and Sweden) dominate.

Types of firms

Furthermore, we analysed which types of firms were covered in the studies and sorted them by size. Please note that for 30% of the studies, we could not identify any indications of the type of firms analysed. Thus, the following data is representative of the remaining 70%. In this dataset, we found that 45% of the articles analysed large firms, 25% analysed SMEs, and 30% combined data from large firms and SMEs. Please note that we have no information on whether the articles utilised a classification of firm size like the one presented by the OECD. To the best of our ability, we categorised the firms according to OECD definitions whenever additional information was present.

Types of services

Lastly, we identified the types of services researched across the articles. The findings are structured based on Miles et al.'s (1995, 2018) categorisation of knowledge-intensive (business) services. In total, we found 74 different types of services in the articles. The number of types of services is higher than the number of articles analysed because some articles analysed various types of services. In decreasing frequency, the following service types were researched: traditional professional services (P-KIBS) (e.g. industrial and manufacturing services or creative services), new technology-based services (T-KIBS) (e.g. digital solution or analytical services), non-KIBS (e.g. facility management and automotive services), and knowledge-intense services (e.g. financial and insurance services). Besides, the analysis shows that research on T-KIBS represents a more recent phenomenon, starting in 2010.

Methodology

The analysis of applied methodologies shows that 74% of the studies were qualitative, 23% were quantitative, and 3% were mixed-method studies. Besides, most studies applied explorative questions: how (45%), what (29%), why (6%), which (3%), when (3%), or combinations of how, what, and why (12%).

Additionally, most articles applied the case study method (56%). In these studies, multiple case studies were the preferred method. The second most common approach was survey (23%), followed by conceptual papers (12%). Out of all 54 studies, five applied other methods. In decreasing order, these were grounded theory (4%), experiments or quasi-experiments (2%), and action research (2%).

Theoretical background

Furthermore, the analysis of the theoretical background of the studies revealed various B2B-SI literature streams. In decreasing order, scholars used service innovation (51%), servitisation (25%), new service innovation (14%), service design (7%), and innovation practices (2%). Second, our findings show that the term SI is used interchangeably. In decreasing order, it has been used with new service development (10n), servitisation (4n), and service design (2n).

Table 9 presents the theories and lenses utilised across the studies of our dataset in combination with SI. The most frequent theories and lenses are value co-creation, service-dominant logic, the resource-based view, and dynamic capabilities.

Table 9: Theoretical and Conceptual Background of the Dataset

No.	Theory and Background	n	%
1	Value Co-creation	13	12,04%
2	Service-Dominant Logic	12	11,11%
3	Resource-Based View	9	8,33%
4	Dynamic Capabilities	8	7,41%
5	Demarcation, Assimilation, and Synthesis	3	2,78%
6	Open Innovation	3	2,78%
7	Solutions	3	2,78%
8	Boundary Objects	1	0,93%
9	Business Model Innovation	1	0,93%
10	Change Management	1	0,93%
11	Contingency Theory	1	0,93%
12	Governance	1	0,93%
13	Institutional Theory	1	0,93%
14	Knowledge Management	1	0,93%
15	Organizational Ecology	1	0,93%
16	Product-Service Systems	1	0,93%
17	Service Blueprinting	1	0,93%
18	Service Modularization	1	0,93%
19	Service-Oriented Architecture	1	0,93%
20	Smartization	1	0,93%
21	Stage-Gate Model	1	0,93%
22	Value-Based Competition Theory	1	0,93%
23	Value Propositions	1	0,93%
		67	62,04%

6.3.2. STATE OF THE ART—B2B-SI

Our review shows that the literature providing insights into how B2B-SI can be achieved is by no means coherent in its concepts. We identified 15 concepts that were used to explain B2B-SI. Four of these concepts were included in our search string. In decreasing frequency, these are process, factor, practice, and mechanism, and the included search term procedure was missing from the results. In decreasing frequency, among the most common concepts not included in our search string are method(ology), model, capability, characteristic, principle, and strategy. For a complete overview of the concepts, their frequency, and associated references, please see Table 10. Below, we will present the state of the art of the B2B-SI literature.

Table 10: Overview State of the Art B2B-SI Literature

Count	**Concepts**	**Author**
13	Process	(Aarikka-Stenroos & Jaakkola, 2012; I. I. Alam, 2011, 2012; Athanasopoulou & Sarli, 2015; Brax & Jonsson, 2009; Gottfridsson, 2010c; Gremyr et al., 2019; Kindström & Kowalkowski, 2009; Koskela-Huotari et al., 2016; Kuusisto & Riepula, 2011; Salminen et al., 2015; Santos & Spring, 2013; Warren & Davies, 2013)
10	Factor	(Cheng & Sheu, 2017; Chester Goduscheit & Faullant, 2018; Ulrike de Brentani, 2001; Finne et al., 2013; Jouny-Rivier et al., 2017; Jouny-Rivier & Ngobo, 2016; Lee et al., 2010; Neu & Brown, 2005; O'Cass & Sok, 2013; Santamaría et al., 2012)
6	Practice	(Biemans & Griffin, 2018a; Bolat, 2019; Enders et al., 2020; Hein et al., 2019; Korhonen & Kaarela, 2015; Leiponen, 2006)
5	Mechanism	(Colm et al., 2020; Hong & Miyazaki, 2013; Lenka et al., 2017; Nardelli, 2017; Tsou & Cheng, 2018)
4	Capability	(Coreynen et al., 2017; den Hertog et al., 2010; Kindström et al., 2013; Kindström & Kowalkowski, 2014)
4	Method(ology)	(Almefelt, Rexfelt, Zackrisson, et al., 2009; Curiazzi et al., 2016; Costa Lima et al., 2018; Rexfelt et al., 2011a)
2	Model	(Baidouri et al., 2012; Mittila, 2011)
2	Principle	(Legner & Vogel, 2007; Lin & Pekkarinen, 2011)
2	Strategy	(Barqawi et al., 2016; Rusanen et al., 2014)
1	Activity	(Wallin et al., 2015)
1	Characteristic	(Schüritz et al., 2018)
1	Contingency	(Kamp et al., 2017)
1	Key Question	(Nuutinen & Ojasalo, 2014)
1	Pattern	(Byun, 2007)
1	Technique	(Bitner et al., 2008)
54	**Total**	

6.3.2.1 B2B-SI: Processes

Our analysis shows no consensus on what characterises efficient B2B-SI processes. Some studies suggest linear and sequential processes (e.g. stage-gate), while others argue for iterative, unstructured, or systemic processes. For example, Alam (2011, 2012) conducts a comparative survey of Australian and Indian financial service businesses utilising a 10-stage B2B-SI process by Alam and Perry (2002) consistent with the stage-gate model (Cooper, 1990). Alam (2011, 2012) particularly emphasises the criticality of diverse team structures, parallel processing, and the drive to reduce development times. Warren and Davies (2013) also advocate for a systematic approach, as proposed by Cooper et al. (1999). Their main argument is that a formal process provides structure, which helps to avoid frustration, particularly in complex SI that integrates various internal and external interactions.

Santos and Spring (2013) criticise linear models of B2B-SI that follow predefined sequential stages and instead suggest a dialectic SI model. They understand SI as a process of change in which an actor challenges the established status quo (e.g. way of service delivery). Following this challenge, actors (incumbents and challengers) reconcile, synthesising a new status quo and highlighting the process of reconfiguring resources and capabilities. This cycle is broken down into three stages: emergence, accommodation, and consolidation. Kindström and Kowalkowski (2009) present a four-stage SI process for industrial services: *"market sensing; development; delivery; and sales."* They argue that SI is not a linear process. Instead, SI happens in iterative or circular developments, including reflection, review, and learning after completing each stage, similar to agile project development. In addition, various essential aspects are emphasised for each stage. For example, the market-sensing stage requires carefully balancing organisational exploration and exploitation, while the development stage should focus on customer involvement to gain valuable insights into customer needs, emphasising relationship building and maintenance. Besides, Gottfridsson's (2010) qualitative study of 11 Swedish service firms proposes that SI is an unstructured, incremental, iterative, and relatively informal learning process. Furthermore, he argues that SI may be achieved by accumulating knowledge, competencies, and experience, highlighting the importance of interactions (knowledge exchange) and knowledge management.

Furthermore, Koskela-Huotari et al. (2016) understand SI as a systemic process of altering institutional arrangements, drawing on service-dominant logic (SDL) (Vargo & Lusch, 2016) and institutional theory (Lawrence et al., 2009; North, 1990). Moreover, they suggest that SI happens through *"breaking, making, and maintaining"* the institutional arrangements of resource integration in service eco-systems. Aarikka-Stenroos and Jaakkola (2012) utilise a set of 120 interviews with knowledge-intense business service (KIBS) firms and develop an SI process grounded in value co-creation and SDL (Vargo & Lusch, 2008), focusing on joint problem-solving. Moreover, Aarikka-Stenroos and Jaakkola (2012) argue that SI in KIBS may happen

in a dialogical, hermeneutical process in which customers significantly influence the design of the value proposition. Therefore, establishing a shared understanding of what creates value becomes critical, suggesting the need for platforms and procedures to enable dialogue and avoid value conflicts.

6.3.2.2 B2B-SI: Factors

Goduscheit and Faullant (2018) explore radical B2B-SI in the context of manufacturing in a multiple case study of Danish SMEs. Building on the SDL (Vargo & Lusch, 2008), they argue that *"actors value networks, resource liquefication, resource density, and resource integration"* are significant factors for successful SI. They also emphasise factors such as enhancing the firm's resource pool by partnering with critical actors and co-creating with customers while avoiding being overly reliant on customer preferences, as these may represent narrow perceptions of future offerings. De Brentani (2001) conducted an extensive survey of experts on new product development to identify the success and failure factors for SI. Among other things, she finds universal factors for radical or incremental SI. For example, she argues that firms must ensure that service offerings fit customer needs and that frontline personnel are integrated into the SI process and utilised as a critical resource to support customers' understanding of service offering distinctiveness and benefits.

Jouny-Rivier and Ngobo (2016) investigate collaborative B2B-SI with customers and factors of commitment. They find that the customer's expectation of potential benefits is the most significant factor. They argue that the higher the perceived benefit, the higher the customer's willingness to commit to co-creation. Additionally, they find that trust and a positive previous experience with co-creation and collaborative tools influence success. Moreover, Jouny-Rivier et al. (2017) find that the clear articulation of co-creation benefits and sacrifices is essential for actor commitment to B2B-SI co-creation. To gain the necessary understanding of these features, firms are advised to identify the goals and needs of each actor involved through continuous dialogue.

Lee et al. (2010) focus on collaboration in a broader context from the perspective of open B2B-SI by investigating the survey data of Korean SMEs. They argue that SMEs face various challenges, such as insufficient human resources or the ability to plan and manage R&D, limiting their ability to engage in open B2B-SI successfully. They propose that SMEs should engage in collaboration to offset these deficits and utilise intermediates that can organise network interactions.

Santamaría et al. (2012) studied Spanish manufacturing companies and found three important SI factors. That is, the development of human capital (training), the utilisation of advanced technologies, and the collaboration with customers. Cheng and Sheu (2017) explore collaborative B2B-SI factors and find that a strategic orientation towards learning has the most significant effect on B2B-SI. They argue that a learning orientation enables firms to best use current and future knowledge. Neu and Brown

(2005) research four cases of Fortune 500 companies to identify factors that enable goods-dominant firms to be successful in SI. They find that it is most critical to achieve alignment among three variables: *"environment, strategy, and factors of organisation"*. O'Cass and Sok's (2013) study explores the underpinning of B2B-SI through the perspective of capabilities and factors in a multi-level study drawing on insights from service experts from South-East Asia. They find that transformational leadership is a significant factor that influences the relationship between SI capabilities and value creation. It is highlighted that an appropriate leadership style is essential for motivating employees and fostering creativity, which enhances SI capabilities and value creation.

6.3.2.3 B2B-SI: Practices

Biemans and Griffin (2018) conducted a substantial study of 372 B2B manufacturers and service providers. Based on their findings, three key SI practices can be distilled. First, successful service innovators establish an SI strategy and culture that creates an environment in which innovative behaviours are encouraged. Second, firms must have appropriate methods to identify and evaluate internal SI at an early stage to avoid resource waste and be able to disseminate knowledge and best practices through the organisation. Lastly, firms should develop approaches that enable them to pursue several related SIs simultaneously. Hein et al. (2019) provide insights into value-co-created SI facilitated using boundary resources in the context of Internet of Things platforms. Moreover, that suggests a process of standardisation building on a set of three practices: *"1) integration of complementary assets; 2) ensuring platform readiness, and 3) servitisation through application enablement."* Bolat (2019) researches innovation practice in the creative businesses and finds that the skilful orchestration of technological resources and capabilities facilitates SI.

Korhonen and Kaarela (2015) explore customer involvement in SI and propose three practices. The first is "shaping the context of value co-creation", which refers to the notion of engaging in a process of imagination with the customer to determine matters such as possible value outcomes or latent needs. The second is "fostering network effects", which relates to the idea of simplifying resource integration, for instance, through improving resource density. Moreover, they emphasise the importance of coping with uncontrollable events, such as the development of markets. The third is "engaging in business with meaning", which highlights the criticality of convincing customers that their involvement will lead to the creation of a valuable experience.

6.3.2.4 B2B-SI: Mechanisms

Lenka et al. (2017) utilises the qualitative data of four industrial manufacturing firms to identify two mechanisms for digital B2B-SI: the *"perceptive"* and *"responsive"* mechanisms. Perceptive mechanisms enable service innovators to identify, evaluate, and address customer needs. Responsive mechanisms emphasise the fast speed of

response to changing or emerging customer demands. Colm et al. (2020) propose a set of five governance mechanisms for SI in complex dyadic (supplier and customer) relationships and link these mechanisms to specific process phases. For the initial experimentation phase, *"temporary asset colocation"* (the limitation of time and investment) and *"network closure"* (the facilitation of a shared and collaborative climate), and ongoing observation, are suggested. For the integration phase, *"knowledge-based boundary objects"* (the alignment of interacting actors and the enablement of tacit knowledge integration) and *"rights allocation agreements"* (the facilitation of knowledge integration in the frame of mutually agreed-upon rules) are proposed. In the final evolution phase, *"liaison champion"* suggests balancing customer requests and market anticipation.

In the context of information technology SI, Tsou and Cheng (2018) present three mechanisms: *"organisational agility"*, *"organisational learning"*, and *"entrepreneurial alertness"*. The first, organisational agility, refers to the organisation's ability to effectively engage with customers, utilise capabilities and resources, and integrate processes. The second, organisational learning, emphasises creating valuable information to direct organisational development in positive directions. The third, entrepreneurial alertness, is defined as the continuous exploration of business opportunities and seizing these opportunities to create value. Hong and Miyazaki (2013) propose *"recombination"* and *"customisation"* as mechanisms in the context of mobile technology SI. Rebundling suggests reutilising and combining existing service components in new ways, while customising refers to modifying services to meet the needs of specific market segments.

Lastly, Nardelli (2017) introduce the mechanism innovation dialectics as a driver of SI. She argues that tensions and conflicts are inherent parts of the SI process and that when they occur, they lead to changes in the needs and expectations of the actors involved. As a result, actors must rebalance needs and expectations to achieve mutually beneficial states, ultimately representing an iterative driver of SI.

6.3.2.5 B2B-SI: Capabilities

Den Hertog et al.'s (2010) seminal paper defines a set of six dynamic capabilities that are considered critical for the development of B2B-SI. These are "signalling user needs and technological options, conceptualising; (un) bundling; co-producing and orchestrating; scaling and stretching; and learning". Moreover, they highlight that capabilities have costs, meaning that innovators must carefully select and nurture capabilities and find a balance between under- and overinvesting. Additionally, capabilities cannot simply be switched on and off; instead, they are subject to a certain "stickiness" and path dependency and take time to develop.

Kindström et al. (2013) conduct a multiple case study with eight product-centric firms researching the microfoundations of dynamic capabilities necessary to facilitate B2B-

SI. In total, they suggest 10 microfoundations distributed across sensing, seizing, and reconfiguration capabilities. Among others, they propose "internal service sensing", referring to identifying promising internal SI development for sensing. For seizing, they argue for the importance of "structuring the service development process" and highlighting the need to be flexible and to adjust processes according to service needs. Lastly, for reconfiguring, they emphasise the need for "creating a service-oriented mental model", implying a service-, customer-, and learning-centred logic. Kindström and Kowalkowski (2014) did a comprehensive investigation of the characteristics of eight business model elements and explored which resources and capabilities associated with these elements contribute to successful B2B-SI. Concerning the B2B-SI development process, they emphasise the criticality of processes and strategies, utilising lead users and specific B2B-SI roles from a resource perspective. In addition, they highlight *"user involvement and engagement"*, *"internal sensing"*, and *"formalisation and replication"* as necessary capabilities for SI.

Coreynen et al. (2017) conduct a multiple case study of four Belgian manufacturing firms to investigate how firms can utilise digital methods to improve B2B-SI. Their study explores different pathways to innovation (industrial, commercial, and value), which enables them to identify various associated capabilities. For example, the commercialisation path emphasises the need for customer involvement capabilities or the value pathway suggests risk assessment and mitigation capabilities.

6.3.2.6 B2B-SI: Method(ologies)

Almefelt et al. (2009) propose a methodology consisting of a process and a set of methods for the early SI. This methodology draws from design processes, known as design thinking, progressing from the broad to the specific and guided by a problem formulation. The overall process can be separated into two stages: a prestudy and a workshop series. The prestudy focuses on understanding and observation. Based on the findings of the prestudy, the workshop series is initiated, consisting of problem analysis as well as idea generation, development, and evaluation. Throughout the workshop, particular emphasis is given to factors such as cross-functionality, creativity stimulation, positive team spirit, and fast pace using methods like 6-3-5, brainstorming, modelling kits, or morphology. Further building on the methodology proposed by Rexfelt et al. (2009, 2011) adds various *"points of departure"* as critical aspects for SI. First, the actors involved must be aware that service is a subjective experience that demands special attention in its development. Next, SI should be problem-oriented, meaning that SI should be driven by real customer needs and reflected in the customer's use context. In addition, co-creation is critical for SI success, requiring a *"joint work arena"* or, in other words, a platform that maximises resource integration. Moreover, since services are difficult to understand, actors must rely on accessible value models and images. Besides, the quantity and diversity of SI ideas stimulate SI. Lastly, actors are encouraged to understand the complexity of SI

as an opportunity, referring to the notion that value is the sum of all related activities and not a single contribution.

Lastly, Lima et al. (2018) suggest a methodology for developing key performance indicators (KPI) to ensure the strategic alignment of focal organisation employees. Based on service-dominant logic (Vargo & Lusch, 2004), they argue that SI depends on all organisational actors' committed and focused involvement to successfully deliver the organisational value promise regardless of whether an actor is in direct contact with the customer or not. Accordingly, organisations must engage in internal brand management to align employees with their business strategies.

Moreover, Curiazzi et al. (2016) offer a methodology that suggests methods and processes that particularly emphasise the need to balance reciprocal value for the organisation and the customers, the establishment of standardised processes to ensure time-efficient development, and the design of such processes in a comparable, reusable, and adaptable fashion so that they can be applied in different contexts.

6.3.2.7 B2B-SI: Principles

Other studies provide insights into how SI happens by defining principles. Legner and Vogel (2007) derive a set of four service design principles from the literature: *"1) interface orientation, 2) interoperability, 3) autonomy and modularity, and 4) business stability"*. For example, the interoperability principle is characterised by the utilisation of standardisation and commonly accepted industry standards. Legner and Vogel also emphasise that it is crucial to weigh the design principles according to the intended value outcome of the service. In addition, Lin and Pekkarinen (2011) suggest the principles of quality function deployment (QFD) and modularity. They explain that QFD is best facilitated through the use of appropriate methods (e.g. house of quality) to understand specific customer needs. Based on this understanding, particular service modules can be selected and combined to fulfil customer needs effectively and efficiently.

6.3.2.8 B2B-SI: Strategies

Barqawi et al. (2016) suggest five strategies that facilitate SI in the context of software-as-a-service (SaaS). They propose that firms should focus on knowledge sharing with customers; make sure that organisational members involved in the SI are in constant exchange; service development projects should be given adequate time horizons to ensure that critical aspects, such as customer need identification or prototyping, are covered; technology is appropriately applied to improve the customer experience; and service mapping (e.g. service blueprinting) is used to explore improvement opportunities and to verify respective roles and interrelationships. Rusanen et al. (2014) focus, in their research, on how firms can access resources through network relationships when engaging in B2B-SI. For this purpose, they

conduct a longitudinal multiple case study in the context of technical B2B services. They propose four critical resource access strategies: *"absorption, acquisition, sharing, and co-creation",* highlighting the need to broaden one's perspective when searching for potential sources of resources.

6.3.2.9 B2B-SI: Activities

Wallin et al. (2015) utilise the case of an aerospace company to investigate routines that enable product-service system (PSS) innovation. They also suggest a three-stage PSS development process. First, during the need stage, establishing a PSS mindset through customer co-creation and an innovative climate that rewards innovation and encourages the development of new ideas is critical. Second, during the solution-seeking stage, routines emphasise involvement by supporting cross-functional interactions and involving network partners. Lastly, during the solution development stage, alignment becomes critical, which can be achieved through competency and business case building.

6.3.2.10 B2B-SI: Characteristics

Schüritz et al. (2018) conduct a literature review in combination with a grounded theory–based analysis of 15 companies that have successfully managed to improve SI using data analytics. Among other things, the study identifies key characteristics of servitized and datatized companies that are beneficial for B2B-SI. For example, successful firms should build on a service-oriented and data-driven culture and have strong customer-facing and IT skills.

6.3.2.11 B2B-SI: Contingencies (catalysers)

Kamp et al. (2017) propose a set of contingencies or catalysers for SI in the context of advanced manufacturing technologies. These are the ability to collect appropriate data, the adequate application of the data, the conversion of the data into actionable knowledge, and the establishment of trust among the actors involved to secure effective data exchange.

6.3.2.12 B2B-SI: Key questions

Nuutinen and Ojasalo's (2014) study explore B2B-SI through a literature review and a multiple case study from the perspective of SMEs. They identify four essential perspectives that are related to central questions: *"How is potential for new service business recognised? How is freedom of action perceived? What kinds of strategies are plausible? What are the reasons, objectives and support for the change?"* Furthermore, they argue that addressing these questions and achieving overall organisational alignment are vital for successful B2B-SI.

6.3.2.13 B2B-SI: Models

Baidouri et al. (2012) discuss the emerging phenomenon of digital context-aware SI and propose a model for service composition. They highlight that service development should be made platform-agnostic, meaning that services should not be limited to one technology. They also emphasise that service composition should enable dynamic response, meaning modifications should be easy depending on the contextual use condition of the service (e.g. weather conditions or location).

6.3.2.14 B2B-SI: Techniques

Bitner et al. (2008) propose service blueprinting as a customer-focused technique for SI. Fundamentally, service blueprints are maps that enable the visualisation of the service process from the customer perspective. It includes five main elements: *"customer action, onstage/visible contact employee action, backstage/invisible contact employee actions, support processes, and physical evidence."* Through the visualisation of these interconnected elements, service innovators can gain a holistic yet simple overview of service interactions that enables target learning and modification.

6.4. DISCUSSION AND RESEARCH AGENDA

The following will discuss the findings of our descriptive analysis and qualitative analysis and point out future research avenues summarised in Table 11 and Table 12.

6.4.1. DESCRIPTIVE INSIGHTS

6.4.1.1 Annual scientific production

From the annual scientific production analysis (see Section 6.3.1.1), it can be inferred that the B2B-SI literature develops in waves (ups and downs), with the current status representing a down (see Figure 4). We suggest that this is the case because it takes time for articles to go through the publication process. Since the literature review data was derived on 17 August 2020, upcoming publications could not have been included. We speculate that the stream will soon reach another potentially even higher production level based on previous developments. One argument supporting this assumption is the overall relevance of services for the economy and the increasing relevance of SI for economic growth (e.g. Feng et al., 2020; The World Bank, 2021). Lastly, we suggest that the ups and downs in annual production may indicate an insufficient theoretical foundation to help scholars explain aspects of B2B-SI.

6.4.1.2 Source analysis

The source analysis of our data shows the dominance of management and marketing journals underrepresenting journals from other disciplines, such as engineering or computer sciences. We suggest that this may be a limiting factor for the stream's development because SI is a multidisciplinary topic covering all disciplines. Hence, a lack of diversity in outlets may create a narrow view on relevant matters because journals, editors, and reviewers can only accommodate so many views. Besides, this finding is surprising to some degree because the literature points out that contributions to SI research come from a wide range of disciplines (e.g. design or health sciences) (e.g. Witell et al., 2016). This paradox may indicate complexities in publishing SI research in journals outside the fields of management and marketing. Additionally, 56% of the studies in this review belonged to just eight (out of 32) journals with an average H-index of 113,5 (SCImago – 06 August 2021). This aggregation in prestigious journals may represent a weakness of the research stream because the high requirements of these journals may filter out potentially valuable contributions, which may affect the research stream's attractiveness (Biemans et al., 2016).

6.4.1.3 Author country analysis

The author's analysis revealed a dominance of European institutions contributing to the research stream. Also, most contributions were single-country. We argue that this is problematic as it indicates a strongly localised contextualisation of the research while B2B-SI is a topic of global concern. Hence, we recommend globalised research efforts with a particular focus on emerging markets and economic powerhouses, such as China and South Korea. In addition, research may be culturally and cognitively biased if a particular region dominates contributions. For example, the Chinese are likely to interpret matters differently from Europeans.

6.4.1.4 Frequency of critical parameters

Dataset origin

Similarly to the analysis of the top 10 corresponding author countries (see section 6.3.1.3), most of the top 10 datasets came from Europe, with the USA and Korea representing the exception. Also, compared to the top 10 corresponding author countries, only the Netherlands and China were missing in the dataset origin. However, China ranked 11th on the list. The Netherlands, on the other hand, was missing entirely, indicating that Dutch authors either used a dataset from a different country or the dataset belongs to the entries we were unable to identify their origin. Lastly, the data shows that Nordic countries (e.g. Denmark, Finland, and Sweden) dominate our dataset. Nordic countries account for 47% of the authors' country and 48% of the dataset origin. Overall, this suggests a strong centricity of B2B-SI-related research in and on Nordic countries.

Firm types

In our dataset, 45% of all studies focus on large firms, and another 30% looked at large firms and SMEs in combined datasets (see Section 6.3.1.4). We argue that current B2B-SI-related research is biased towards large firms, which may be problematic as it neglects learnings from small, potentially more innovative firms, such as startups. The findings also suggest that a considerable share of the studies do not distinguish between large firms and SMEs, which may be due to generalisation attempts. However, it can be argued that differences (e.g. approaches, resources, or logic) exist between these types of organisations. Thus, we suggest that various comparative research settings, such as large vs SMEs or different firms of similar sizes across different industries, may provide valuable insights for B2B-SI research.

Analysed service types

Based on the analysis of the service types (see section 6.3.1.4), we argue that B2B-SI research is increasingly moving towards T-KIBS, meaning that digital components or services with digital components are at the centre of research. However, we can also see that much of the concerned research is focused on digital aspects of industrial services (e.g. pay per use or advanced manufacturing technologies). Hence, we suggest a broader perspective and a greater variety of digital services. In particular, the fact that more and more consumer-facing digital service providers, such as Google, Apple, and Facebook, are pushing into the B2B space emphasises the need for research in digital eco-systems and platforms in B2B contexts.

Methodology

The analysis of the applied methodologies (see Section 6.3.1.4) revealed that most of the studies were qualitative. The majority of the research questions were how and why, which suggests that B2B-SI research is at a nascent and explorative stage. Based on the dominance of empirical case study research (56%) and the low degree of conceptual (12%) or grounded theory (4%) research, we suggest that B2B-SI research is characterised by a low degree of theoretical explanation. Because of these findings, we suggest that quantitative and mixed-method research could contribute significantly to knowledge development due to its confirmative and normative nature. Besides, we suggest that more theory building attempts should be made to further enhance the ability to explain. Lastly, in analysing scholarly suggestions on how to improve B2B-SI research methodologically, one method stood out. Various scholars suggest approaching research longitudinally (e.g. Alam, 2012; Colm et al., 2020) because it allows us to learn about B2B-SI over time, which can teach us matters like how it emerges or changes.

Theoretical background

Furthermore, our findings confirm the claims of previous studies that SI innovation constructs are used interchangeably, which suggests a lack of commonly accepted SI definitions (Biemans et al., 2016; Witell et al., 2016; Gustafsson et al., 2020). This interchangeability can be problematic because differences across these concepts exist,

potentially leading to research that talks about everything and nothing simultaneously. Besides, we noticed that the vast majority of studies in our dataset did not specify their or to which definition of SI they adhere. This lack of clarity makes it complicated to classify studies (e.g. assimilation, demarcation, or synthesis perspectives) and build on existing studies. Thus, we suggest that it would be beneficial for future studies to situate research in the literature more clearly to enhance progress in the field.

The analysis of the theoretical background (see Section 6.3.1.4) revealed an emphasis on value co-creation and service-dominant logic. We argue that these findings imply an increasing awareness of the relevance of collaborative and customer-centric approaches and thinking in B2B-SI. In other words, it signals a departure from goods-dominant logic, which has previously dominated SI research (Vargo & Lusch, 2004, 2008). This claim can be further supported when looking at the data from an evolutionary perspective. We can see that value co-creation and service-dominant logic gained popularity from early 2010 onwards. Along with these, research on dynamic capabilities and the resource-based view has become more frequent in recent years, which likely relates to a new set of resources and capabilities needed in changing contexts. However, much remains unanswered despite the increasing popularity of these theories and concepts in B2B-SI research. For instance, value co-creation scholars (e.g. Plé, 2017) highlight a positive bias neglecting negative outcomes of interactions, such as value co-destruction or adverse behaviours (e.g. opportunism). In the same vein, we argue that B2B-SI research has a positive bias. Based on the insights of our dataset, we found no study that was concerned with adverse contexts or phenomena. Hence, we suggest that research into the adverse contexts and phenomena of B2B-SI is warranted.

The analysis also reveals a limited use and variety of theories and concepts in B2-SI. For example, recent developments in SI research point towards various logics next to service-dominant logic, such as service logic (Grönroos & Voima, 2013) or customer-dominant logic (Heinonen & Strandvik, 2015). Nonetheless, service-dominant logic also represents a relatively new theory and continues to provide fruitful avenues for research. For example, scholars may want to explore institutional theory (e.g. institutional work) as a driver for innovation (e.g. Vargo et al., 2015) and how institutional logics affect resource integration (Koskela-Huotari et al., 2016). Also, the combination of open innovation and SDL can be a promising path, for instance, concerning the nature of value (Lee et al., 2010). Finally, we suggest that theories and concepts of low frequency can represent emerging and underresearched literature in the field of B2B-SI. For example, recent studies show the relevance of boundary objects and their usefulness in bridging knowledge and communicational gaps across actors (e.g. Mele et al., 2019).

Table 11: Main research gaps and future research avenues - Descriptive analysis

No.	Research Limitation/Gap	Future Agenda
1	• B2B-SI research publications are mostly limited to management and marketing journals.	• Given the multidisciplinary nature of SI, researchers should strive to publish in journals outside of management and marketing.
2	• Most publications occur in journals with an average H-index of 113,5.	• More efforts need to be made to disseminate SI research across all levels of journals to avoid elite and silo developments.
3	• Most research is authored by European institutions in Nordic countries and represent single-country contributions.	• B2B-SI research is of interest not only in Europe but across the globe, especially due to digitalisation. Hence, more efforts need to be made globally in a diverse context (e.g. developing or emerging markets) and across countries.
4	• Although research on digital services is rising, much of the research remains limited to digital aspects in industrial services.	• Research should take a broader perspective and consider various digital services, such as digital eco-systems and platforms.
5	• B2B-SI has primarily focused on qualitative explorative approaches.	• B2B-SI research should explore quantitative and mixed-method opportunities because of their confirmative and normative potential.
6	• Despite the large share of qualitative studies in B2B-SI M research, conceptual, grounded theory and longitudinal contributions are scarce.	• More efforts should be directed towards theory building to increase the ability to explain. Also, efforts should be made to explore B2B-SI longitudinally and identify critical and unique cases.
7	• Many studies used SI-related concepts interchangeably, and only a few studies define or classify their notion of SI.	• B2B-SI scholars and SI, in general, should more clearly situate themselves in the literature to improve opportunities for targeted and consecutive developments.
8	• B2B-SI is characterised by a limited use and variety of theories and lacks the depth of theoretical exploration.	• Future studies should explore the opportunities for a more diverse set of theories (e.g. practice theory, open innovation, or institutional theory) and approach research with more established theories from various angles (e.g. integrating theories).

6.4.2. QUALITATIVE INSIGHTS

6.4.2.1 B2B-SI: How can it be achieved?

The following section discusses how B2B-SI can be achieved based on the synthesis of the most common B2B-SI concepts (see Table 10). From a processual perspective, B2B-SI may be achieved through structured and formal or more unstructured, less formal, or ad hoc processes depending on contextual factors, such as type of innovation (e.g. incremental or radical), or service type (e.g. digital, public, or engineering) (Alam, 2011, 2012; Brax & Jonsson, 2009; Gottfridsson, 2010).

Although it remains unclear what characterises an appropriate number process stage, ranging from as little as four to ten (Alam, 2011; Kindström & Kowalkowski, 2009), it appears that B2B-SI is developed in an iterative fashion in which increments build on each other (Aarikka-Stenroos & Jaakkola, 2012; Almefelt et al., 2009; Kindström & Kowalkowski, 2009; Koskela-Huotari et al., 2016; Rexfelt et al., 2011). Moreover, the B2B-SI literature emphasises rather systemic interactions, including various actors (e.g. customers or suppliers), as opposed to dyadic, firm–customer interactions (Goduscheit & Faullant, 2018; Jouny-Rivier et al., 2017; Jouny-Rivier & Ngobo, 2016; Koskela-Huotari et al., 2016).

The analysis of B2B-SI factors highlights a focus on effective exchange, orchestration, and integration of resources (Goduscheit & Faullant, 2018) to establish best need fit (de Brentani, 2001). Underlying this condition is the notion of limited resources available to individual actors (Goduscheit & Faullant, 2018; Lee et al., 2010). Actors may respond to the limitation of value co-creation, which refers to the interaction of various service eco-system actors to maximise overall resource utilisation and value creation. Central to these efforts are an emphasis on trustful relationship building, continuous exchange or dialogue, and actor alignment (Jouny-Rivier et al., 2017; Jouny-Rivier & Ngobo, 2016; Lee et al., 2010; Santamaría et al., 2012).

Common among practice-related studies is a focus on shaping the context of B2B-SI, or in other words, establishing favourable conditions. It appears that certain mindsets or cultures, such as innovative, entrepreneurial, service-centric, or customer-centric orientations and behaviours, are beneficial (Biemans & Griffin, 2018; Hein et al., 2019). Besides, the orchestration of resources and capabilities among relevant actors connected to the B2B-SI could be derived as a central practice (Bolat, 2019; Korhonen & Kaarela, 2015).

What unifies mechanisms are the identification of altering circumstances, such as new technologies, competitors, or customer needs and expectations, and the initiation of appropriate responses. The literature highlights a particular emphasis on co-creational interactions among service eco-system actors, showing a need for balancing different interests to avoid frictions and enable optimal exchange and learning (Hong & Miyazaki, 2013; Lenka et al., 2017; Nardelli, 2017; Tsou & Cheng, 2018). Moreover, the installation of an effective means of relationship protection is warranted, referring to the need for governance, such as asset colocation or knowledge-based boundary objects (Colm et al., 2020; Nardelli, 2017).

When it comes to B2B-SI capabilities, there is little consensus on how many capabilities are necessary, ranging from six to ten (den Hertog et al., 2010; Kindström et al., 2013). However, what unities B2B-SI capabilities is that they are fundamentally based on dynamic capabilities, suggesting a need for sensing, seizing, and

reconfiguring (Coreynen et al., 2017; den Hertog et al., 2010; Kindström et al., 2013; Kindström & Kowalkowski, 2014).

The central theme of B2B-SI methodologies appears to be the utilisation of design-driven methodologies closely related to design or service design thinking. Methods such as ideation, prototyping, or mapping are used to empathise with the service beneficiary (e.g. customer) and to gain a deep understanding of its true challenges, needs, and contextual service use. Hence, from a methodological perspective, B2B-SI may be best characterised by problem orientation. As with the previous concepts mentioned above, co-creation appears to be of significance. The literature highlights the criticality of establishing joint work arenas or platforms that enable the interactions among actors (Almefelt et al., 2009; Lima et al., 2018; Rexfelt et al., 2011).

Based on the above, it can be argued that there is no one-size-fits-all approach to B2B-SI. Instead, B2B-SI is a complex, multifaced undertaking, structured contextually, in consideration of organisational circumstances, service eco-system actors, and value outcomes. It aims to maximise systemic resource utilisation and value creation by emphasising practices that establish favourable conditions. These efforts rely on dynamic capabilities, which are exerted in design-driven methodologies.

6.4.2.2 Critical assessment of the B2B-SI literature

Moreover, the analysis also reveals a major weakness in the B2B-SI literature. In fact, one may argue that the literature is somewhat fragmented and lacks a cohesive body that provides a clear understanding of how B2B-SI can be achieved. A multitude of 15 different concepts (e.g. processes, factors, practices, or capabilities) contribute to the subject, which conveys a vaguely unified message of what is truly critical for successful B2B-SI. In addition, the literature is mainly concerned with specific instances, such as types of innovation (e.g. incremental or radical), types of firms (e.g. large or SME), or types of services (e.g. financial, digital, or manufacturing). Considering the above, we suggest that the literature's current state remains relatively immature, lacking explainability and, perhaps most importantly, inclusive theory.

We argue that one reason why the literature may be characterised by a limited ability to explain B2B-SI is the concepts used to explain B2B-SI, given that the three most common concepts (process, factor, and practice) provide an idea of the basis of this claim. A process may be understood as a series of actions, a factor as an influence that contributes to a result, and a practice as a recurring action or habit. What is problematic with these concepts is the extent to which they can individually explain the cause of an outcome in a holistic manner.

In comparison, mechanism, another concept present in the literature, seems to be a more integrated concept. It can be defined as the fundamental parts of a system

responsible for a phenomenon. Alternatively, Bechtel and Abrahamsen (2005) define a mechanism as *"a structure performing a function in virtue of its component parts, component operations, and their organisation. The orchestrated functioning of the mechanism is responsible for one or more phenomena.*" These definitions imply an interplay of various high-level and fundamental elements, consisting of smaller elements (e.g. procedures, processes, practices, or factors), which in their entirety form a system that causes B2B-SI. Therefore, mechanisms represent a rich and coherent concept that unites individual parts in interconnected systems (Bechtel & Abrahamsen, 2005; Craver & Bechtel, 2007). Thus, we argue that future studies may utilise the concept of mechanisms to synthesise fragmented contributions, enabling an overall understanding, through theory building, of how B2B-SI can be achieved.

6.4.2.3 Future research directions in B2B-SI

The B2B-SI literature is increasingly concerned with the notion of service eco-systems. Fundamentally, this stream of research deviates from the idea that B2B-SI is developed in dyadic relationships. Instead, B2B-SI emerges through the resource-integrating interactions of various actors in dynamic interrelated systems. These systems are relatively open and place the service beneficiary (e.g. customer/client) at the core of B2B-SI (Brax & Jonsson, 2009; Lusch & Vargo, 2018). Because of these developments, we suggest that B2B-SI research should take a systemic view by examining broader sets of units of analysis beyond the service provider and recipient dyad, including systemic actors, such as third-party providers (Kamp et al., 2017; Kindström et al., 2009; Koskela-Huotari et al., 2016).

Furthermore, the B2B-SI literature is concerned with the nature of products and services. In particular, scholars discuss whether the divide between product and service innovations is still appropriate (e.g. Wallin et al., 2015; Hakanen et al., 2017). Firms increasingly offer so-called product-service systems (PSS), pushing the boundaries of products and services. For example, Xerox "pay per copy" or Rolls Royce "power by the hour" are well-known examples of PSS, representing hybrids of products and services. From a theoretical standpoint, this development raises the question of whether it is helpful to research product and service innovations independently, providing grounds for the synthesis perspective, which accommodates the idea that innovation theories should be open enough to cover product and service innovations. However, research in this direction is scarce (Biemans and Griffin, 2018), warranting research covering topics such as the characteristics, challenges, and benefits associated with PSS (Hakanen et al., 2017; Biemans and Griffin, 2018), interdependencies between product and service innovation processes (Brax & Jonsson, 2009), PSS development practices (Hakanen et al., 2017), and capabilities (Wallin et al., 2015).

As previously mentioned, co-creation is a central theme (see Section 6.5.1) in the B2B-SI literature and is generally approached from a value co-creation perspective

(e.g. Vargo and Lusch, 2016). However, our understanding of value co-creation, particularly in systemic B2B settings, remains limited (Ostrom et al., 2015; Goduscheit and Faullant, 2018). For example, Hakanen et al. (2017) call for more research on the efficient management and orchestration of resources, interests, and needs. Lenka et al. (2017) highlight a limited understanding of what characterises value co-creation capabilities and mechanisms, particularly in digital settings. However, Hong and Miyazaki (2013) point out that value co-creation may change power balances because B2B markets are characterised by more knowledgeable or expert actors, questioning the role of the focal actor as an innovator in B2B-SI and opening opportunities for research on dependencies, agency, and organisational boundaries. Considering the above, one may suggest that co-creation may not always lead to positive value outcomes, raising questions about the negative aspects of co-creation. For example, there might be differences between the types of actors (e.g. suppliers or customers) in terms of their willingness or commitment to co-creation, and some actors may be more suitable to be included than others (Jouny-Rivier et al., 2017; Goduscheit and Faullant, 2018).

Value propositions are closely linked to the topic of value co-creation. The B2B-SI literature discusses its intangibility and how this affects actors' ability to perceive and experience value (Kindström and Kowalkowski, 2009; Gottfridsson, 2010). Based on the understanding that value emerges in use and context (Koskela-Huotari et al., 2016), some scholars warrant more explorative research on value tensions, conflicts, and potential failure, particularly on how such events may be avoided (Aarikka-Stenroos & Jaakkola, 2012; Nardelli, 2017).

Table 12: Main research gaps and future research avenues - Qualitative analysis

No.	Research Limitation/Gap/Trend	Future Agenda
1	• The B2B-SI literature is characterised by limited explainability and fragmentated, multiple underlying concepts.	• Future research may want to utilise the prospect of mechanisms as an integrative, inclusive, and holistic concept for theory development.
2	• Much of the B2B-SI research focuses on a narrow dyadic relationship view.	• Future studies may consider a systemic view on B2B-SI and explore more diverse sets of units of analysis beyond the service provider and recipient dyad.
3	• The advent of product-service systems initiated a debate on whether product and service innovation differ.	• Scholars may want to explore the opportunities related to the synthesis perspective, offering an inclusive approach that accommodates product and service innovation theories covering aspects such as challenges, interdependencies, or development practices and capabilities.
4	• Value co-creation is a central topic of B2B-SI research, yet an understanding of its specificities, especially in the service eco-system context remains limited.	• Future studies may want to investigate topics such as efficient ways of management and orchestration of resources in service eco-systems, value co-creation capabilities in digital settings,

		issues of power and dependency, agency, and organisational boundaries.
5	• The B2B-SI-related value co-creation literature has a dominantly positive view on value outcomes.	• Future research may want to consider the possibility of negative value outcomes of co-creation, for instance, in the context of diverse actors, willingness or commitment to co-create, or differences in terms of actor suitability.
6	• Value propositions form a central element of actors' interactions (e.g. when value co-creating), yet research on the limitations of value perception and experience are scarce.	• Scholars may want to consider intricacies of value perception and experiences in various actor interactions and explore issues, such as tensions, conflict, failure, as well as effective means of avoidance.

6.5. CONCLUSION

B2B-SI offers enormous opportunities for value creation, competitive advantage, and growth. Despite the increasing awareness of this potential, research on this topic remains nascent. Overall, the literature is characterised by low diversity, an inconsistent knowledge body of fragmented contributions, and limited theoretical contributions.

This review analysed the state of the art, thereby contributing to a synthesis of the existing knowledge and providing insights into the main characteristics of the B2B-SI literature. The review's findings enabled the identification of limitations in the B2B-SI literature, which led to the formulation of future research propositions. It also offers practical implications, and practitioners may use the review as a directory to identify relevant studies for their B2B-SI needs. Furthermore, the review provides a synthesis of how B2B-SI can be achieved, enabling an informed discussion of strategy development and implementation.

Every study has its limitations, and so does ours. The review dataset was based on literature from the electronic databases Scopus or Web of Sciences written in English, potentially limiting the overall scope of the analysis. In addition, the literature identification was mainly based on keyword searches; thus, relevant papers that may use keywords outside the scope of this study may have been excluded. Finally, despite a rigorous application of best literature review practices, the findings of this study depend on the reviewer's experience and background.

REFERENCES

Aarikka-Stenroos, L., & Jaakkola, E. (2012). Value co-creation in knowledge intensive business services: A dyadic perspective on the joint problem solving process. *Industrial Marketing Management*, *41*(1), 15–26. https://doi.org/10.1016/j.indmarman.2011.11.008

Alam, I. (2011). Exploring cross-national differences in service innovation process and strategy in developing and developed nations. *Journal of Service Management*, *22*(5), 586–606. https://doi.org/10.1108/09564231111174960

Alam, I. (2012). New service development in India's business-to-business financial services sector. *Journal of Business and Industrial Marketing*, *27*(3), 228–241. https://doi.org/10.1108/08858621211207243

Alam, I, & Perry, C. (2002). A customer-oriented new service development process. *Journal of Services Marketing*, *16*(6), 515–534. https://doi.org/10.1108/08876040210443391

Almefelt, L, Rexfelt, O., Zackrisson, D., & Hallman, T. (2009). Methodology for service innovation in a multi-disciplinary context. *DS 58-5: Proceedings of ICED 09, the 17th International Conference on Engineering Design*, *5*, 405–416.

Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, *11*(4), 959–975. https://doi.org/10.1016/j.joi.2017.08.007

Athanasopoulou, P., & Sarli, E. (2015). The development of new sponsorship deals as new business-to-business services. *Journal of Business and Industrial Marketing*, *30*(5), 552–561. https://doi.org/10.1108/JBIM-08-2012-0127

Baidouri, H., Hafiddi, H., Nassar, M., & Kriouile, A. (2012). A model-driven approach for context-aware services composition. *2012 International Conference on Multimedia Computing and Systems, ICMCS 2012*, 693–698. https://doi.org/10.1109/ICMCS.2012.6320249

Baines, T., Ziaee Bigdeli, A., Bustinza, O. F., Shi, V. G., Baldwin, J., & Ridgway, K. (2017). Servitization: revisiting the state-of-the-art and research priorities. *International Journal of Operations and Production Management*, *37*(2), 256–278. https://doi.org/10.1108/IJOPM-06-2015-0312

Barqawi, N., Syed, K., & Mathiassen, L. (2016). Applying service-dominant logic to recurrent release of software: an action research study. *Journal of Business and Industrial Marketing*, *31*(7), 928–940. https://doi.org/10.1108/JBIM-02-2015-0030

Berry, L. L., Shankar, V., Turner Parish, J., Cadwallader, S., & Dotzel, T. (2006). Creating new markets through service. *MIT Sloan Management Review*, *47*(2), 56-63.

Biemans, W. G., Griffin, A., & Moenaert, R. K. (2016). New service development: How the field developed, its current status and recommendations for moving the field forward. *Journal of Product Innovation Management*, *33*(4), 382–397. https://doi.org/10.1111/jpim.12283

Biemans, W. G., & Griffin, A. (2018). Innovation practices of B2B manufacturers and service providers: Are they really different? *Industrial Marketing Management*, *75*, 112–124. https://doi.org/10.1016/j.indmarman.2018.04.008

Bitner, M. J., Ostrom, A. L., & Morgan, F. N. (2008). Service blueprinting: A practical technique for service innovation. *California Management Review*, *50*(3), 66–94. https://doi.org/10.2307/41166446

Bolat, E. (2019). Mobile tech: superfood or super fad of creative business? *Journal Of Business-To-Business Marketing*, *26*(3–4), 295–318. https://doi.org/10.1080/1051712X.2019.1611083

Brax, S. A., & Jonsson, K. (2009). Developing integrated solution offerings for remote diagnostics: A comparative case study of two manufacturers. *International Journal of Operations and Production Management*, *29*(5), 539–560. https://doi.org/10.1108/01443570910953621

Byun, S.-Y. (2007). Study on the web service composition and connection patterns. *SERA 2007: Fifth ACIS International Conference on Software Engineering Research, Management, and Applications*, 903–907. https://doi.org/10.1109/SERA.2007.122

Carlborg, Per, Kindström, D., & Kowalkowski, C. (2014). The evolution of service innovation research: a critical review and synthesis. *The Service Industries Journal*, *34*(5), 373–398. https://doi.org/10.1080/02642069.2013.780044

Cheng, C. C. J., & Sheu, C. (2017). When are strategic orientations beneficial for collaborative service innovation? *Service Industries Journal*, *37*(7–8), 466–493. https://doi.org/10.1080/02642069.2017.1335713

Goduscheit, R., & Faullant, R. (2018). Paths toward radical service innovation in manufacturing companies—A service-dominant logic perspective. *Journal of Product Innovation Management*, *35*(5), 701–719. https://doi.org/10.1111/jpim.12461

Christensen, C. M. (2016). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (3rd ed.). Harvard Business Review Press.

Colm, L., Ordanini, A., & Bornemann, T. (2020). Dynamic governance matching in solution development. *Journal of Marketing*, *84*(1), 105–124. https://doi.org/10.1177/0022242919879420

Cooper, R. G. (1990). Stage-gate systems: A new tool for managing new products. *Business Horizons*, *33*(3), 44–54. https://doi.org/10.1016/0007-6813(90)90040-I

Cooper, R.G., Edgett, S.J. and Kleinschmidt, E.J. (1999) New Product Portfolio

Management: Practices and Performance. *Journal of Product Innovation Management*, 16, 333-351. http://dx.doi.org/10.1016/S0737-6782(99)00005-3

Coreynen, W., Matthyssens, P., & Van Bockhaven, W. (2017). Boosting servitization through digitization: Pathways and dynamic resource configurations for manufacturers. *Industrial Marketing Management*, *60*, 42–53. https://doi.org/10.1016/j.indmarman.2016.04.012

Curiazzi, R., Rondini, A., Pirola, F., Ouertani, M. Z. M.-Z., & Pezzotta, G. (2016). Process standardization to support service process assessment and re-engineering. In Cavalieri, S., Ceretti, E., Tolio, T. Pezzotta, G. (Eds.), *Product-service systems across life cycle, 2016* (Vol. 47, pp. 347–352). Elsevier B.V. https://doi.org/10.1016/j.procir.2016.03.104

de Brentani, U. (2001). Innovative versus incremental new business services: Different keys for achieving success. *Journal of Product Innovation Management*, *18*(3), 169–187. https://doi.org/10.1016/S0737-6782(01)00071-6

den Hertog, P., van der Aa, W., & de Jong, M. W. (2010). Capabilities for managing service innovation: Towards a conceptual framework. *Journal of Service Management*, *21*(4), 490–514. https://doi.org/10.1108/09564231011066123

Denyer, D., & Tranfield, D. (2009). Producing a systematic review. In D. A. Buchanan & A. Bryman (Eds.), *The Sage Handbook of Organizational Research Methods* (pp. 671–689). SAGE Publications Ltd.

Dotzel, T., & Shankar, V. (2019). The relative effects of business-to-business (vs. business-to-consumer) service innovations on firm value and firm risk: An empirical analysis. *Journal of Marketing*, *83*(5), 133–152. https://doi.org/10.1177/0022242919847221

Droege, H., Hildebrand, D., & Heras Forcada, M. A. (2009). Innovation in services: Present findings, and future pathways. *Journal of Service Management*, *20*(2), 131–155. https://doi.org/10.1108/09564230910952744

Edvardsson, B., Gustafsson, A., & Roos, I. (2005). Service portraits in service research: A critical review. *International Journal of Service Industry Management*, *16*(1), 107–121. https://doi.org/10.1108/09564230510587177

Enders, T., Martin, D., Sehgal, G. G., & Schüritz, R. (2020). Igniting the Spark: Overcoming Organizational Change Resistance to Advance Innovation Adoption – The Case of Data-Driven Services. In: Nóvoa H., Drăgoicea M., Kühl N. (eds) Exploring Service Science. *IESS 2020. Lecture Notes in Business Information Processing*, vol 377. Springer, Cham. https://doi.org/10.1007/978-3-030-38724-2_16

Feng, C., Ma, R., & Jiang, L. (2020). The impact of service innovation on firm performance: a meta-analysis. *Journal of Service Management*, *32*(3), 289–314. https://doi.org/10.1108/JOSM-03-2019-0089

Finne, M., Brax, S., & Holmström, J. (2013). Reversed servitization paths: A case

analysis of two manufacturers. *Service Business*, *7*(4), 513–537. https://doi.org/10.1007/s11628-013-0182-1

Gebauer, H., Fleisch, E., & Friedli, T. (2005). Overcoming the service paradox in manufacturing companies. *European Management Journal*, *23*(1), 14–26. https://doi.org/10.1016/j.emj.2004.12.006

Gebauer, H., Fleisch, E., Lamprecht, C., & Wortmann, F. (2020). Growth paths for overcoming the digitalization paradox. *Business Horizons*, *63*(3), 313–323. https://doi.org/10.1016/j.bushor.2020.01.005

Gottfridsson, P. (2010). Development of personalised services in small business: An iterative learning process. *Managing Service Quality*, *20*(4), 388–400. https://doi.org/10.1108/09604521011057504

Gremyr, I., Valtakoski, A., & Witell, L. (2019). Two routes of service modularization: advancing standardization and customization. *Journal of Services Marketing*, *33*(1), 73–87. https://doi.org/10.1108/JSM-10-2018-0285

Grönroos, C., & Voima, P. (2013). Critical service logic: Making sense of value creation and co-creation. *Journal of the Academy of Marketing Science*, *41*(2), 133–150. https://doi.org/10.1007/s11747-012-0308-3

Gustafsson, A., Snyder, H., & Witell, L. (2020). Service innovation: A new conceptualization and path forward. *Journal of Service Research*, *23*(2), 111–115. https://doi.org/10.1177/1094670520908929

Hakanen, T., Helander, N., & Valkokari, K. (2017). Servitization in global business-to-business distribution: The central activities of manufacturers. *Industrial Marketing Management*, *63*, 167–178. https://doi.org/10.1016/j.indmarman.2016.10.011

Hein, A., Weking, J., Schreieck, M., Wiesche, M., Boehm, M., & Krcmar, H. (2019). Value co-creation practices in business-to-business platform ecosystems. *Electronic Markets*, *29*(3), 503–518. https://doi.org/10.1007/s12525-019-00337-y

Heinonen, K., & Strandvik, T. (2015). Customer-dominant logic: foundations and implications. *Journal of Services Marketing*, *29*(6–7), 472–484. https://doi.org/10.1108/JSM-02-2015-0096

Hong, S., & Miyazaki, K. (2013). Technological and non-technological innovations in B2B mobile services in Korea. *Asian Journal Of Technology Innovation*, *21*(1), 1–20. https://doi.org/10.1080/19761597.2013.815480

Jouny-Rivier, E., & Ngobo, P.-V. (2016). Drivers of companies' willingness to co-create B2B services. *Recherche Et Applications En Marketing-English Edition*, *31*(3, SI), 61–87. https://doi.org/10.1177/2051570716658461

Jouny-Rivier, E., Reynoso, J., & Edvardsson, B. (2017). Determinants of services co-creation with business customers. *Journal of Services Marketing*, *31*(2), 85–103. https://doi.org/10.1108/JSM-01-2016-0001

Kamp, B., Ochoa, A., & Diaz, J. (2017). Smart servitization within the context of industrial user-supplier relationships: contingencies according to a machine tool manufacturer. *International Journal Of Interactive Design And Manufacturing - Ijidem*, *11*(3), 651–663. https://doi.org/10.1007/s12008-016-0345-0

Kindström, D., & Kowalkowski, C. (2009). Development of industrial service offerings: A process framework. *Journal of Service Management*, *20*(2), 156–172. https://doi.org/10.1108/09564230910952753

Kindström, D., & Kowalkowski, C. (2014). Service innovation in product-centric firms: A multidimensional business model perspective. *Journal of Business and Industrial Marketing*, *29*(2), 96–111. https://doi.org/10.1108/JBIM-08-2013-0165

Kindström, D., Kowalkowski, C., & Sandberg, E. (2013). Enabling service innovation: A dynamic capabilities approach. *Journal of Business Research*, *66*(8), 1063–1073. https://doi.org/10.1016/j.jbusres.2012.03.003

King, N., & Brooks, J. (2018). Thematic Analysis in Organisational Research . In C. Cassell, A. Cunliffe, & G. Grandy (Eds.), *The SAGE Handbook of Qualitative Business and Management Research Methods: Methods and Challenges*. SAGE Publications Ltd. https://doi.org/10.4135/9781526430236

Korhonen, H. M. E. E., & Kaarela, I. (2015). Practices for involving organizational customers in service innovation. In *The Handbook of Service Innovation* (pp. 591–615). Springer-Verlag London Ltd. https://doi.org/10.1007/978-1-4471-6590-3_27

Koskela-Huotari, K., Edvardsson, B., Jonas, J. M., Sörhammar, D., & Witell, L. (2016). Innovation in service ecosystems-Breaking, making, and maintaining institutionalized rules of resource integration. *Journal of Business Research*, *69*(8), 2964–2971. https://doi.org/10.1016/j.jbusres.2016.02.029

Kowalkowski, C., Gebauer, H., & Oliva, R. (2017). Service growth in product firms: Past, present, and future. *Industrial Marketing Management*, *60*, 82–88. https://doi.org/10.1016/j.indmarman.2016.10.015

Kuusisto, A., & Riepula, M. (2011). Customer interaction in service innovation: seldom intensive but often decisive. Case studies in three business Service Sectors. *International Journal Of Technology Management*, *55*(1–2, SI), 171–186. Https://Doi.Org/10.1504/IJTM.2011.041686

Lawrence, T. B., Suddaby, R., & Leca, B. (2009). Introduction: Theorizing and studying institutional work. In *Institutional Work: Actors and Agency in Institutional Studies of Organizations* (pp. 1–28). Cambridge University Press. https://doi.org/10.1017/CBO9780511596605.001

Lee, S., Park, G., Yoon, B., & Park, J. (2010). Open innovation in SMEs-An intermediated network model. *Research Policy*, *39*(2), 290–300. https://doi.org/10.1016/j.respol.2009.12.009

Legner, C., & Vogel, T. (2007). Design principles for B2B services - An evaluation of two alternative service designs. *Proceedings - 2007 IEEE International Conference on Services Computing, SCC 2007*. https://doi.org/10.1109/SCC.2007.50

Leiponen, A. (2006). Managing knowledge for innovation: The case of business-to-business services. *Journal of Product Innovation Management*, *23*(3), 238–258. https://doi.org/10.1111/j.1540-5885.2006.00196.x

Lenka, S., Parida, V., & Wincent, J. (2017). Digitalization Capabilities as Enablers of Value Co-Creation in Servitizing Firms. *Psychology & Marketing*, *34*(1), 92–100. https://doi.org/10.1002/mar.20975

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *Journal of Clinical Epidemiology*, *62*(10), e1–e34. https://doi.org/10.1016/j.jclinepi.2009.06.006

Lima, I C, Au-Yong-Oliveira, M., & Madaleno, M. (2018). Service innovation implications: The importance of business alignment by employees. In A. M.P.C., C. C., A.-Y.-O. M., & A. M.P.C. (Eds.), *13th European Conference on Innovation and Entrepreneurship, ECIE 2018* (Vols. 2018-Septe, pp. 997–1005).

Lin, Y., & Pekkarinen, S. (2011). QFD-based modular logistics service design. *Journal of Business and Industrial Marketing*, *26*(5), 344–356. https://doi.org/10.1108/08858621111144406

Lusch, R. F., & Vargo, S. L. (2018). An overview of service-dominant logic. In S. L. Vargo & R. F. Lusch (Eds.), *The SAGE Hanbook of Service-Dominant Logic* (pp. 3–21). SAGE Publications Ltd. https://doi.org/http://dx.doi.org/10.4135/9781526470355.n1

Mele, C., Sebastiani, R., & Corsaro, D. (2019). Service innovation as a social construction: The role of boundary objects. *Marketing Theory*, *19*(3), 259–279. https://doi.org/10.1177/1470593118809794

Miles, I. D., Belousova, V., & Chichkanov, N. (2018). Knowledge intensive business services: ambiguities and continuities. *Foresight*, *20*(1), 1–26. https://doi.org/10.1108/FS-10-2017-0058

Miles, I., Kastrinos, N., Flanagan, K., Bilderbeek, R., Den Hertog, P., Huntink, W., & Bouman, M. (1995). *Knowledge-intensive business services: users, carriers and sources of innovation*. European Commission.

Mittila, T. (2011). From customer intelligence to customer understanding in industrial service. In Schiuma, G and Lonnqvist, A and Spender, JC (Ed.), *2011 6th International Forum On Knowledge Asset Dynamics (Ifkad2011): Knowledge-Based Foundations Of The Service Economy* (pp. 1217–1227).

Nardelli, G. (2017). Innovation dialectics: an extended process perspective on innovation in services. *Service Industries Journal*, *37*(1), 31–56. https://doi.org/10.1080/02642069.2017.1289513

Neu, W. A., & Brown, S. W. (2005). Forming successful business-to-business services in goods-dominant firms. *Journal Of Service Research*, *8*(1), 3–17. https://doi.org/10.1177/1094670505276619

North, D. C. (1990). Institutions, institutional change and economic performance. In *Institutions, Institutional Change and Economic Performance*. Cambridge University Press. https://doi.org/10.1017/cbo9780511808678

Nuutinen, M., & Ojasalo, K. (2014). Enhancing service innovation in a business-to-business context: Four questions for SMEs transforming to service logic. *International Journal of Quality and Service Sciences*, *6*(4), 290–308. https://doi.org/10.1108/IJQSS-06-2013-0033

O'Cass, A., & Sok, P. (2013). Exploring innovation driven value creation in B2B service firms: The roles of the manager, employees, and customers in value creation. *Journal of Business Research*, *66*(8), 1074–1084. https://doi.org/10.1016/j.jbusres.2012.03.004

Ostrom, A. L., Bitner, M. J., Brown, S. W., Burkhard, K. A., Goul, M., Smith-Daniels, V., Demirkan, H., & Rabinovich, E. (2010). Moving forward and making a difference: Research priorities for the science of service. *Journal of Service Research*, *13*(1), 4–36. https://doi.org/10.1177/1094670509357611

Ostrom, A. L., Parasuraman, A., Bowen, D. E., Patrício, L., & Voss, C. A. (2015). Service research priorities in a rapidly changing context. *Journal of Service Research*, *18*(2), 127–159. https://doi.org/10.1177/1094670515576315

Plé, L. (2017). Why do we need research on value co-destruction? *Journal of Creating Value*, *3*(2), 162–169. https://doi.org/10.1177/2394964317726451

Rexfelt, O., Almefelt, L., Zackrisson, D., Hallman, T., Malmqvist, J., & Karlsson, M. (2011). A proposal for a structured approach for cross-company teamwork: a case study of involving the customer in service innovation. *Research In Engineering Design*, *22*(3), 153–171. https://doi.org/10.1007/s00163-011-0104-y

Rusanen, H., Halinen-Kaila, A., & Jaakkola, E. (2014). Accessing resources for service innovation - the critical role of network relationships. *Journal of Service Management*, *25*(1), 2–29. https://doi.org/10.1108/JOSM-10-2012-0219

Salesforce Research. (2018). *State of the connected customer report outlines changing standards for customer engagement*. https://www.salesforce.com/news/stories/state-of-the-connected-customer-report-outlines-changing-standards-for-customer-engagement/

Salminen, J., Rinkinen, S., & Khan, R. (2015). Developing a regional design support service. *Info*, *17*(4), 81–90. https://doi.org/10.1108/info-01-2015-0007

Santamaría, L., Jesús Nieto, M., & Miles, I. (2012). Service innovation in manufacturing firms: Evidence from Spain. *Technovation*, *32*(2), 144–155. https://doi.org/10.1016/j.technovation.2011.08.006

Santos, J. B., & Spring, M. (2013). New service development: managing the dynamic between services and operations resources. *International Journal Of Operations & Production Management*, *33*(7), 800–827. https://doi.org/10.1108/IJOPM-12-2012-0559

Schüritz, R., Satzger, G., Seebacher, S., & Schwarz, L. (2018). Datatization as the next frontier of servitization – Understanding the challenges for transforming organizations. *38th International Conference on Information Systems: Transforming Society with Digital Innovation, ICIS 2017*.

Sinkovics, N. (2016). Enhancing the foundations for theorising through bibliometric mapping. *International Marketing Review*, *33*(3), 327–350. https://doi.org/10.1108/IMR-10-2014-0341

Snyder, H., Witell, L., Gustafsson, A., Fombelle, P., & Kristensson, P. (2016). Identifying categories of service innovation: A review and synthesis of the literature. *Journal of Business Research*, *69*(7), 2401–2408. https://doi.org/10.1016/j.jbusres.2016.01.009

Storey, C., Cankurtaran, P., Papastathopoulou, P., & Hultink, E. J. (2016). Success factors for service innovation: A meta-analysis. *Journal of Product Innovation Management*, *33*(5), 527–548. https://doi.org/10.1111/jpim.12307

Storey, C., & Hughes, M. (2013). The relative impact of culture, strategic orientation and capability on new service development performance. *European Journal of Marketing*, *47*(5), 833–856. https://doi.org/10.1108/03090561311306903

The World Bank. (2021). *Services, value added (% of GDP) | Data*. https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS?most_recent_value_desc=true

Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, *14*(3), 207–222. https://doi.org/10.1111/1467-8551.00375

Tsou, H.-T. H.-T., & Cheng, C. C. J. J. (2018). How to enhance IT B2B service innovation? An integrated view of organizational mechanisms. *Journal of Business and Industrial Marketing*, *33*(7), 984–1000. https://doi.org/10.1108/JBIM-07-2017-0175

Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, *68*(1), 1–17. https://doi.org/10.1509/jmkg.68.1.1.24036

Vargo, S. L., & Lusch, R. F. (2008). Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science*, *36*(1), 1–10.

https://doi.org/10.1007/s11747-007-0069-6

Vargo, S. L., & Lusch, R. F. (2011). It's all B2B...and beyond: Toward a systems perspective of the market. *Industrial Marketing Management*, *40*(2), 181–187. https://doi.org/10.1016/j.indmarman.2010.06.026

Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: an extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, *44*(1), 5–23. https://doi.org/10.1007/s11747-015-0456-3

Vargo, S. L., Wieland, H., & Akaka, M. A. (2015). Innovation through institutionalization: A service ecosystems perspective. *Industrial Marketing Management*, *44*, 63–72. https://doi.org/10.1016/j.indmarman.2014.10.008

Wallin, J., Parida, V., & Isaksson, O. (2015). Understanding product-service system innovation capabilities development for manufacturing companies. *Journal of Manufacturing Technology Management*, *26*(5), 763–787. https://doi.org/10.1108/JMTM-05-2013-0055

Warren, V., & Davies, B. (2013). Structuring the unstructured: service innovation in a UK small business services firm. In Teirlinck, P And Kelchtermans, S And Debeule, F (Ed.), *Proceedings Of The 8th European Conference On Innovation And Entrepreneurship, Vol 2* (pp. 641–648).

Witell, L., Snyder, H., Gustafsson, A., Fombelle, P., & Kristensson, P. (2016). Defining service innovation: A review and synthesis. *Journal of Business Research*, *69*(8), 2863–2872. https://doi.org/10.1016/j.jbusres.2015.12.055

CHAPTER 7. CONFLICT BY DESIGN AND WHY INSTITUTIONS MATTER IN SERVICE DESIGN: A CASE OF A GERMAN CREATIVE AGENCY IN CHINA[3]

Struwe, Sascha and Slepniov, Dmitrij

Aalborg University Business School (AAUBS), Denmark

Sino-Danish College (SDC), University of Chinese Academy of Sciences (UCAS), China

Abstract

This paper set out to advance our understanding of how to improve service design and service provider–customer relationships in business-to-business (B2B) environments. Drawing on the theoretical lenses of service-dominant logic, service design and institutional theory, we investigate how and why the dark side manifests itself in B2B relationships between service co-creating actors in professional service settings. Additionally, we propose how these problems can be avoided. The study takes place in an international environment. It employs an in-depth single embedded case study of the relationship between a German creative agency and a German industrial client operating in China. Our work chronicles how their relationship developed over time, eventually resulting in a breakdown. The findings captured in the framework highlight an array of contributing factors. Propositions are made on how a more stable and robust agency–client relationship can be built and the dark side of B2B relationships defeated.

Keywords: Service Design, Interface, Institutions, Dark Side of Business-to-Business Relationships, Professional Services, Case Study

[3] This article has been published in the Journal of Business Research https://doi.org/10.1016/j.jbusres.2021.03.035

7.1. INTRODUCTION

Business-to-business (B2B) relationships are not easy. When entities that may differ across many dimensions—including size, organisational culture, country of origin and operating logic—come together, the prospects of misunderstandings, conflicts and opportunism are high, and many B2B relationships end in disarray (Fang et al., 2011; Abosag et al., 2015).

The professional services sector is by no means exempt from these tendencies. We may think of companies in the service-related sectors as the best practice examples of empathy, customer-centricity and experience management. This may be so, but a shared understanding of what constitutes a good design in meeting customer needs may be challenging to achieve (Brown & Martin, 2015; Heskett, 2017). Even when the service co-creating actors are aligned in their perceptions of a satisfactory result of their efforts, this does not necessarily shield them from the dark side of B2B relationships. Adverse outcomes, including rising customer expectations, opportunism and loss of objectivity may still arise (Dwyer et al., 1987; Mooi & Frambach, 2012).

The creative and advertising industries, with their often vague and feelings-based deliverables, create fruitful ground for various elements of the dark side of B2B relationships to thrive. Failures and losses of key accounts by creative agencies are often blamed on exogenous forces, worsening market conditions with razor-thin margins, and growing competition. However, there may be other aspects, such as institutions and institutional logics (Koskela-Huotari & Vargo, 2016) and their implications for the agency's work and the service design it delivers. In particular, service interfaces, infrastructures and actualisation mechanisms (Secomandi & Snelders, 2011) may play a crucial role in meaningful value creation in B2B relationships. Failing to recognise existing institutions and to approach service design accordingly may lead to conflict by design and deteriorate agency–client relationships, which is what we aim to uncover and discuss in the remaining sections of this paper.

This paper has four main sections. First, the theoretical background section introduces the conceptual backdrop of the paper built on the service design literature and institutional theory. Second, the qualitative methodological approach employed in the study is presented. Third, the empirical part of the paper provides insights into the case study. Finally, the analysis and discussion are presented, before concluding with crucial lessons, implications for future research and the study limitations.

7.2. THEORETICAL BACKGROUND

7.2.1. SERVICE-DOMINANT LOGIC

7.2.1.1 Characteristics of service-dominant logic

Service-Dominant Logic (S-D logic) represents an alternative economic view of traditional *Goods-Dominant Logic* (G-D logic). It suggests a meta-theoretical framework, which has been increasingly accepted as a theory for market and value co-creation (Vargo & Akaka, 2009; Akaka et *al.*, 2019; Wetter-Edman et al., 2014).

S-D logic considers service, instead of goods, as the foundation of economic and social exchange. From the S-D logic viewpoint, as opposed to the G-D logic, with its labels of 'producer' and 'consumer' of value, exchange refers to the exchange of services, as in the activity of doing something to benefit reciprocally, which links to the concepts of value co-creation as a resource integration process. Besides, S-D logic accepts the concepts of value-in-use and value-in-context as opposed to the value-in-exchange and embedded value of the G-D logic. This notion challenges the G-D logic producer-centric understanding of value determination. In the G-D logic, value is embedded in the produced goods and defined by the exchange-value (e.g. price). In contrast, S-D logic understands that value is uniquely determined by the beneficiary, based on value-in-use (e.g. through its application) and value-in-context (e.g. in consideration of available resources or abilities); hence, value is subjective, holistic and experiential (Eggert & Ulaga, 2002; Vargo & Lusch, 2018).

7.2.1.2 Value creation in B2B relationships

Furthermore, following the S-D logic, firms engage in making value propositions that clients can choose to accept (Vargo & Lusch, 2018). The acceptance of a value proposition is based on the client's perception of the proposed value as being valuable. The industrial marketing literature describes the value assessment process as a trade-off between the potential benefits and sacrifices (e.g. monetary costs, time and effort) linked to the exchange (Ulaga & Eggert, 2005). It is assumed that customers aim to increase benefits and decrease sacrifices. An optimal value proposition is perceived as a balance between value-in-use, value-in-context, and its necessary sacrifices (Lindgreen & Wynstra, 2005).

Grönroos (2011) highlights that a critical feature of this dynamic is the personal interactions between the service provider and the client, as they significantly contribute to shaping the client's value assessment. In this sense, value creation is focused on not only the object of exchange (value proposition) but also the exchange process (interaction). Notably, features such as active dialogue and effective information sharing are seen as key to facilitating customers' value-in-use (Grönroos, 2008). However, Tuli et al. (2007) and Nordin and Kowalkowski (2010) emphasise

that establishing effective dialogue can be difficult, especially when service offerings are complex. Examples include situations in which the service provider is dependent on customers defining their needs or when customers miss the capabilities or knowledge to express their needs. In addition, complexity increases with the number of steps in the exchange process (Shostack, 1987), with high levels of uncertainty presenting a need for information search and comprehension of unfamiliar routines of decision making from the customer's perspective (Alejandro et al., 2011). Overall, in this context, Koskela-Huotari and Vargo (2016) and Vargo and Lusch (2016, 2018) emphasise that value creation is collaborative and contextual, which implies that institutions (rules, norms and beliefs) and institutional logics play a crucial role in the outcome of exchange processes.

7.2.2. INSTITUTIONS

7.2.2.1 Institutions' role in the process of resource integration

Exchange processes are closely related to the resource integration that takes place during value co-creation. Edvardsson et al. (2014) and Koskela-Huotari and Vargo (2016) conceptualise resources as dynamic, as something that becomes valuable through the process of resource integration in value co-creation activities organised around shared institutions (Ostrom, 2005; Vargo & Lusch, 2016). In the same vein, Lusch and Vargo (2014) refer to the notion of "resourceness", which Koskela-Huotari and Vargo (2016) define as "the ability of potential resources to facilitate the accomplishment of something desirable". Furthermore, they explain "resourceness" as contingent on the actor's access to other enabling and constraining resources and the actor's ability to integrate them.

Thornton and Ocasio (2012) highlight that institutions shape institutional logics, which in turn, enable or constrain resource integration and, ultimately, value-creation. North (1990) defines institutions as the "rules of the game". Friedland and Alford (1991) define institutional logics as "a set of material practices and symbolic constructions which constitutes its organising principles and which is available to organisations and individuals to elaborate". Therefore, institutions and institutional logics can be understood as the sense-making mechanisms that define how resources are integrated (Vargo & Akaka, 2012).

Kostova et al. (2008) point out that institutional logics possess inherent hybridity, with an evolving emphasis over time. Therefore, actors are confronted with a variety of simultaneously occurring institutional logics at any given time. This multiplicity is also termed *institutional complexity*. Furthermore, it can manifest itself in both intra- and inter-organisational relations. Organisations can deal with institutional complexity and thereby classify often conflicting ideas from a variety of different logics through successful management (Greenwood et al., 2011).

Shared institutional arrangements can be achieved through mutual resource integration and interaction practices. Koskela-Huotari and Vargo (2016) suggest that to establish shared institutional arrangements that would allow for positive value assessment and the attainment of resourceness, particularly, the value-proposing actor must understand how resources become a valuable resource for another actor. This understanding requires a holistic view of resource integration. It is suggested that actors build on enabling and avoiding constraining institutional elements. Failing to understand constraining and enabling institutions can have adverse effects on actors' relationships (Seo & Creed, 2002; Vargo et al., 2015; Koskela-Huotari & Vargo, 2016).

7.2.3. SERVICE DESIGN

Many scholars argue that service design can be understood as a sophisticated, human-centred, collaborative, holistic approach to enhancing existing or creating entirely new service systems and offerings (Ostrom et al., 2015; Yu & Sangiorgi, 2018).

At its core is the aim to understand contextual customer experience and anticipate new value propositions. It elevates design thinking by adding a service perspective (Ostrom et al., 2015; Stickdorn et al., 2018). Furthermore, service design is, by nature, multidisciplinary, as it borrows from a range of theories belonging to different disciplines; for example, some suggest that it can be linked to service innovation (Ostrom et al., 2015; Yu & Sangiorgi, 2018). From the S-D logic perspective, service innovation is "a process of integrating resources in novel ways to enable new forms of value co-creation among actors" (Lusch & Nambisan, 2015). Ostrom et al. (2015) argue that service design plays a significant role in service innovation because it brings new service ideas to life. However, the literature is rather vague concerning the transition from service design to service innovations (Prestes Joly et al., 2019).

Secomandi and Snelders (2011) define service design through touchpoints between actors. Touchpoints are characterised by three critical elements: the exchange relation, interface and infrastructure, and materiality.

With regard to exchange relationships, a fundamental aspect of service design is the involvement of key stakeholders, such as service providers and customers, in exchange relationships. Essentially, these relationships set the frame and roles of the actors involved in co-creation. Secomandi and Snelders (2011) suggest that service design requires a set of sociotechnical resources. According to Edvardsson and Olsson (1996), one of these resources is an effective customer relationship management process that is aligned with customer logics regarding behaviour and quality perceptions. Aside from this, Shostack (1977) emphasises that the service provider must continuously monitor and manage the tangible outcomes of the service.

Another aspect of service design is the division of service creation into two domains: interface and infrastructure. The interface refers to sociotechnical resources that are directly related to the exchange between the service provider and the client, for instance, a waiter serving a guest. On the other hand, the infrastructure represents the resources indirectly related to the exchange, for example, a chef that prepares the meal for the guests (Secomandi & Snelders, 2011). Secomandi and Snelders (2011) highlight that interface and infrastructure are inextricable counterparts in the exchange and integration relationship of sociotechnical resources. However, although service exchange relationships require infrastructure, ultimately, it is the interface that actualises service activities (Shostack, 1977). For this reason, the interface can be considered "the end-point of all service deliberations" (Secomandi & Snelders, 2011).

Lastly, Secomandi and Snelders (2011) introduce the aspect of interface materiality. They refer to the ability of the interface to transform the intangibility of services into something tangible. They emphasise the concept of tangibility because customers can only experience what the service provider actualises, or in other words, makes tangible to the customer (Secomandi & Snelders, 2011). Thus, to affect the exchange relationship, the service provider must actualise intangible resources through the interface in a way that the client can perceive. In this process, it is humans, considered as sociotechnical resources, that are of critical importance. Their skills, knowledge, motivation and commitment may have the most significant effect (Edvardsson & Olsson, 1996; Gallouj & Weinstein, 1997). That is because interfaces do not represent "a standalone artefact with clear object boundaries". Instead, human interaction embodies the interface. Furthermore, interpersonal encounters do not substitute interfaces' materiality. Finally, the "service interface materialises an exchange relation between service providers and customers and the design of the service interface, perhaps more than anything else, is the design of the service itself" (Secomandi & Snelders, 2011).

7.2.4. THE DARK SIDE OF BUSINESS-TO-BUSINESS RELATIONSHIPS

Abosag et al. (2016) explain that the concept of a dark side is associated with the problems, complexities, difficulties or drawbacks that may occur in business relationships. Many highlight that despite the relevance to business relationships, research in the field is scarce (Fang et al., 2011; Abosag et al., 2016; Chung et al., 2016). Abosag et al. (2015) suggest that the dark side B2B relationship literature can be separated into two main streams: a relationship development process perspective and an investigation of the business relationship construct perspective. In both streams, the reasons for relationship termination have been of great interest.

The current literature, among other things, has insufficient social exchange mechanisms, such as trust and commitment (Yang et al., 2018), is insufficient or lacks safeguard mechanisms, such as relationship-specific assets (Heide & John, 1990, 1992; Heide, 1994), and has low barriers of termination, such as costs (Heide & John,

1988). However, with a few exceptions (Abosag & Lee, 2013), research has, thus far, mostly investigated reasons from either one or the other perspective of dark side relationships. Therefore, some scholars call for the integration of relational constructs within the development process of relationships. It is suggested that studies taking a broader and more contextual perspective have made valuable contributions (Abosag et al., 2015, 2016). As this study borrows from the service design literature to understand the relationship process in more depth, the following section will focus on relational constructs from the dark side literature.

7.2.4.1 Dark-side relational constructs

Relational constructs can positively and negatively impact business relationships (Gaski, 1984). However, Haakansson and Snehota (1998) highlight that business relationships are not black or white. Instead, dark and bright constructs co-exist. Samaha et al. (2011) explain that dark constructs can increasingly emerge, especially in long-term relationships, making it difficult to identify, acknowledge, and manage such critical components of business relationships. Research is clear that the earlier specific tolerable dark-side constructs are addressed, the likelier business relationships are to avoid the emergence of intolerable ones. Failing to do so will inevitably lead to relationship termination (Haakansson & Snehota, 1998; Fang et al., 2011; Abosag et al., 2015).

According to Abosag et al. (2015), established positive relational constructs are trust and commitment, and negative constructs are conflict, uncertainty and opportunism. Dwyer et al. (1987) argue that successful business relationships correlate with establishing trust and commitment. Trust is considered a multidimensional construct, consisting of performance and affective related trust. Essentially, trust is concerned with the willingness of actors to rely on the competencies, reliability and agility of other actors at an inter-organisational or interpersonal level (Miyamoto & Rexha, 2004; Johnson & Grayson, 2005).

Commitment is perceived as an enduring expectation of business relationship actors for a continuous future relationship. This expectation may be implicit or explicit (Dwyer et al., 1987; O'Malley & Tynan, 1997). Nonetheless, O'Malley and Tynan (1997) are not shy to point out that commitment does not have to be a bilateral concept. Some actors in, for instance, a service provider–customer relationship may be more committed than others, which is considered a cause of opportunism.

Negative relational constructs can alter a positive relationship into a negative one. Among other things, shifts in relational dynamics, interactions or context can be reasons for a negative impact (Abosag et al., 2015). Barki and Hartwick (2004) define conflict as "a dynamic process that occurs between interdependent parties as they experience negative emotional reactions to perceived disagreements and interference with the attainment of their goals". Although conflict can be a source of positive

change (Edvardsson et al., 2014; Koskela-Huotari & Vargo, 2016), it is usually considered harmful (Chenet et al., 2000). That is because it can create undesirable stress in relationships, particularly about agreements over goals and how such goals should be achieved (Shaw et al., 2003). However, since conflict is a natural part of business relationships, it must be managed effectively (Rose & Shoham, 2004).

Uncertainty is another negative relational construct. It can be defined as the degree to which an actor with inadequate information makes decisions, predicts results and has confidence in its decisions (Achrol & Gundlach, 1999). According to Morgan and Hunt (1994), uncertainty can be considered a consequence of lacking trust because trust increases certainty in decision-making. Heide (1994) points out that the adverse effects of uncertainty influence trust and commitment development. Furthermore, high degrees of uncertainty risk long-term orientation and may lead to opportunistic behaviour.

The last negative relational construct that business relationships may face is opportunistic behaviour. According to Ouchi and Williamson (1977), opportunistic behaviour is defined as actions driven by self-interest. Among other things, opportunistic behaviour may show through purposely withholding information or communicating it in ineffective ways, acting against agreements, or preventing the business partner from realising business value (Heide et al., 2007). Literature suggests that opportunistic behaviour is most likely to occur in uncertain contexts (Dwyer et al., 1987) and is expected to have a long-lasting and harmful effect on trust and commitment and the business relationship as a whole. Lastly, Provan and Skinner (1989) point out that power inequality is a significant driver of opportunistic behaviour.

Ultimately, in combination with dark-side relational constructs, we reflect on interfirm governance. For this reflection, the work of Heide (1994) is particularly relevant to our study. Heide (1994) describes an interfirm governance framework based on governance forms, for example, market and nonmarket (hierarchical and bilateral) governance, and in terms of initiation, maintenance and relationship termination processes. Additionally, we consider safeguard mechanisms, such as buyer–supplier specific assets (Heide & John, 1990, 1992).

7.2.5. LACK OF RESEARCH IN B2B SERVICE DESIGN

Apart from a few exceptions, most of the service design literature (Brown & Martin, 2015; Ho, Sharma & Hosie, 2015; Patrício et al., 2018) seems to be concerned with B2C environments. Furthermore, many researchers agree that the dark side of B2B relationships has yet to receive the adequate attention it deserves—in particular, aspects of relationship termination (Fang et al., 2011; Abosag et al., 2016; Chung et al., 2016).

In this paper, we aim to contribute to this body of literature and set out to 1) investigate how and why tensions and conflicts occur in B2B relationships between service co-creating actors in the professional services sector and 2) propose how these tensions and conflicts can be effectively avoided.

In examining the dark side of B2B relationships, we aim to introduce a new inquiry line into the phenomenon. Figure 7 highlights our study's analytical framework, which builds on the theoretical lenses presented in the previous sections, that is, service-dominant logic, service design, and institutional theory. The investigation takes place in a complex international business setting and employs a single embedded case of a relationship between a German creative agency and a German client operating in China.

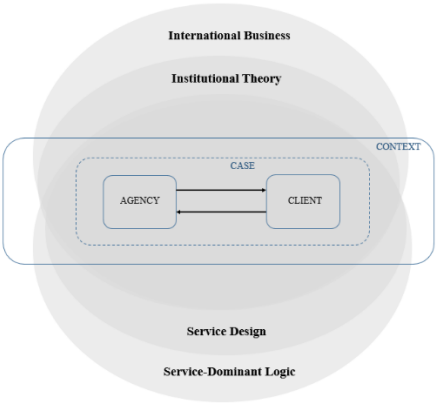


Figure 7. Analytical Framework of the Study

7.3. METHODOLOGY AND CASE STUDY

7.3.1. RESEARCH DESIGN

The study builds on the abductive approach and the pragmatist tradition (Josephson & Josephson, 1994), which in this paper manifests itself through the interplay between theory and practice and is executed in the form of the single case study design (Eisenhardt, 1989; Yin, 2017). The research applies this investigative method to provide in-depth insights into a contemporary phenomenon in its real-world context. Furthermore, case study research is an increasingly established approach in service innovation and service design studies (Zomerdijk & Voss, 2011; Toivonen et al., 2012; Yu & Sangiorgi, 2018). Scholars like Yang and Hsiao (2009), Tsou (2012), Shi and Au-Yeung (2015) also highlight that case study research is an increasingly applied method in East Asian contexts. Moreover, these studies emphasise that a consideration

of the East Asian context is a necessary and timely undertaking due to the increasing importance of the region for the world economy. That is because many of the existing models and theories we use today were developed in the West, which is why cultural specificities and differences remain unaccounted for in advancing our understanding of the current and emerging phenomena.

Several criteria were used to select the case for the investigation. First, the selection was influenced by Ostrom et al.'s (2015) call for more work that incorporates the global context beyond the perspective of Western economies. We were interested in the service design processes that occur in international settings. Second, to capture the phenomenon's full complexity, we aimed at complex and knowledge-intensive services rather than routine services based on manual work. Finally, the case was also supposed to represent uncertain and dynamic settings, that is, undergoing changes in management strategies, employee constellations, and new approaches to client relations.

The case selected for the study was based on a relationship between Chinese subsidiaries of two German companies: a creative agency providing a one-stop service combining all communication solutions under one roof and one of its strategically important global clients. The case study involved multiple embedded units. To understand all the complexities of the relationship between the primary sub-units of the case (i.e. agency and client subsidiaries in China), we also cast a glance at their mother companies, which indirectly affected how the relationship unravelled (Figure 8).

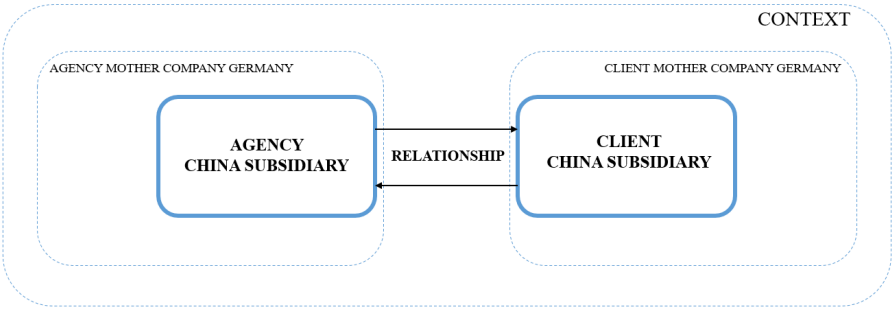


Figure 8. Embedded Units of the Case Study in Context

7.3.2. DATA COLLECTION

The case was developed by using a variety of sources, including interviews, archival records, direct observations, participant observations and meeting notes. The authors have followed the case since January 2017. The case development began by

investigating the agency side and later focusing on the clients and their B2B relationships.

Furthermore, 12 interviews were conducted between 2017 and 2018. The interview dataset (Table 13) consists of five pilot interviews with respondents ranging from junior- to senior-level positions, as well as seven subsequent semi-structured interviews with senior-level managers. All the interviewees had been involved in service design interactions with the agency, for both pilot and main stage interview types and interview grids were designed. The interview grid of the pilot interviews consisted of 10 explorative questions, including viewpoints of the market environment, the nature of the service design, and client perceptions. As a result of our findings from the pilot interviews and the literature (Secomandi & Snelders, 2011; Lusch & Vargo, 2014; Koskela-Huotari & Vargo, 2016), we designed a more focused interview grid. The semi-structured interviews consisted of 15 questions that touched upon aspects such as customer-centricity and interface-related concerns.

Table 13. Interview Data

	No	Ref. Code	Respondent	Min	Company*	Industry	Role
Pilot Interviews	1	Intv. GECD	Global Executive Creative Director	33	Int. Board	Creative	SP
	2	Intv. HoD	Head of Digital	23	Greater CN	Creative	SP
	3	Intv. JPDM	Jr. Planer Digital Media	21	Media DE	Creative	SP
	4	Intv. SAD	Sr. Art Director	18	Greater CN	Creative	SP
	5	Intv. 1-MD	Managing Director	15	Greater CN	Creative	SP
Semi-Structured Interviews	6	Intv. DoBD	Director of Business Development	107	'Systems that Work'	Consulting	TPSP
	7	Intv. MP	Managing Partner	71	Campaign Int.	Creative	SP
	8	Intv. QOM	Lead SCM & Quality Operations Manager	57	'Fly High'	Aviation	C
	9	Intv. ADoMC	Assoc. Director. of Marketing Communication	54	'Catch a Car'	Transportation	C
	10	Intv. CEO	Founder & CEO	54	'Strategy that Matters'	Consulting	TPSP
	11	Intv. DGSCM	Dir. Global SCM	45	'Taste the Best'	Flavours/ Fragrances	C
	12	Intv. 2-MD	Managing Director	28	Greater CN	Creative	SP
			Total (min)	526			
			Total (h) Fully transcribed	8,8			

* To respect the anonymity of the client companies, they were given fictitious names reflecting their business activities

Legend Abbreviations: Service Provider (SP), Third Party Service Provider (TPSP), Client (C)

The reviewed archival records, observations and meeting notes were used for triangulation. Both indirect and participatory observations were conducted at several

different locations. Among these were observations at two sites that were particularly important. First are the observations conducted at the agency's office in Beijing, followed by observations made during visits to the client's customer relations department at its Chinese headquarters in Beijing.

Furthermore, we participated in several formal and informal meetings with internal and external actors. These became the source of our meeting notes, which played an essential role in developing the case. It is important to mention that Table 13 provides a detailed overview of all the interviews that contributed to the development of the study, amounting to data sources that go beyond the central case relationship. These are different units of the agency (SP), which are directly linked to *Figure 8* and others, such as clients (C) and connected third-party service providers (TPSP), outside of the case relationship. We utilised these external case data points to validate and improve our understanding of the case dynamics from additional angles. Furthermore, Table 14 is concerned with data sources, such as meeting and observation notes, that are uniquely linked to our central case visualised in *Figure 8*.

Table 14. Overview of Other Data Sources

No	Type of Document	Nature	Date	Location	Attendees*
1	Meeting Notes	Formal	04/23/2018	Agency Office	MD, RSR
2	Meeting Notes	Informal	05/07/2018	Agency Office	GL EXEC CR Dir. , RSR
3	Meeting Notes	Formal	05/09/2018	Agency Office	MD, RSR
4	Observation Notes	Formal	05/05-09/2018	Client HQ in China	Client: HoCRM, Staff CRM, Staff IT Agency: Digital Creative Team, RSR
5	Company Documents	Formal	2017-2018		
6	Process Charts	Formal	2017-2018		
7	Service Descriptions	Formal	2017-2018		
8	Financial Spreadsheets	Formal	2017-2018		
9	Annual Reports	Formal	2017-2019		

* Legend Abbreviations: Managing Director (MD), Researchers (RSR), Global Executive Creative Director (GL EXEC CR Dir), Head of Customer Relationship Management (HoCRM)

7.3.3. DATA ANALYSIS

The data analysis consisted of three steps (Figure 9). In the first step, using NVivo, we worked with different data sources following two approaches. First, we approached the data by structuring insights into service design-inspired maps. We applied customer journey mapping, service blueprinting and stakeholder mapping (Bitner et al., 2008; Rosenbaum et al., 2017; Stickdorn et al., 2018). These maps were

principally useful because of their ability to visualise experiences, actions and business processes from a variety of angles, such as touchpoints, pain points and expectations. Furthermore, these maps allowed the researcher to understand interactions as a whole and from different levels of abstraction by either zooming in or out. Besides, as it is not uncommon to have at least three stages in the B2B service development or design process (Tuli et al., 2007; Kindström & Kowalkowski, 2009; Gottfridsson, 2010), we decided to break down the service design process of our case accordingly. First, we defined the following phases: *Project Initiation & Ideation*, *Development* and *Launch Phase*. The process of mapping the data allowed us to derive 311 NVivo node references. Second, we approached the data inductively to derive a better understanding of the background and context of the case, for instance, to gain insights into the market situation or client characteristics. From our inductive analysis, we were able to derive 151 NVivo node references.

In the second step, we took the derived NVivo node references from the initial step and broke them down abductively, using Word and Excel. We did this by identifying patterns, for example, of experiences, such as pain points or motivations, among the references and categorised them accordingly. Additionally, we utilised a ranking system based on the times informants mentioned a topic to better understand the relevance and potential leads.

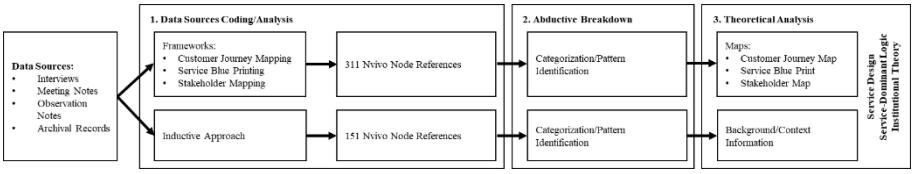


Figure 9. Research Design and Data Treatment

The output of the second step was refined maps (customer journey, service blueprint and stakeholder maps) as well as more precise insights into the background and context of the agency and client relationship. Lastly, in answering our research question, the developments of the second step were analysed through our theoretical lenses of service design, service-dominant logic, and institutional theory (Figure 7).

7.3.4. CASE DESCRIPTION

The following case description refers to *Figure 8* and builds on the sources outlined in Table 13 and Table 14. Furthermore, it represents an attempt to provide more in-depth insights into the actors in the study in order to enable the necessary foundations of analytical generalisability (Yin, 2017).

7.3.4.1 Service provider—German mother company

The service provider on which this study focuses was part of a German marketing and communication agency group. The German mother company is considered one of the world's leading communication agency groups. The group characteristically provides an integrated marketing approach by combining all communication disciplines under one roof. Consequently, agility, human-centricity and empathy are crucial aspects that drive the group's service design and provision activities.

7.3.4.2 Service provider—Chinese subsidiary

In unravelling the specific agency–client relationship that provides the empirical base for this study, it is essential to zoom into the group's subsidiary in China. The agency's subsidiary (hereafter referred to as the agency) had three offices located in Beijing, Shanghai, and Hong Kong. The office in the capital (Beijing) became the central location of the case.

Despite the establishment of three locations, China was a relatively new market for the group. Apart from the market potential, a strong driver for establishing a subsidiary in China was the interest of one of the group's main international clients to continue using the group's marketing services in China. Given these prospects, the group entered the Chinese market in 2013. This venture was quickly rewarded, as the client, who strengthened the group's interest in China, decided to sign a three-year retainer contract at the end of 2014, which went into effect in 2015 and made it the agency's most significant account. The contract was signed between the agency and the client subsidiary independent of other group arrangements. The service agreement was mostly concerned with digital customer relationship management services for the client's Chinese product portfolio.

In 2017, when the data collection for this study began, the agency was in the process of completing its first three-year retainer contract with the client. Following the completion, the subsidiary was subsequently rewarded with another three-year contract set between 2018 and 2020. However, the relationship between the agency and the client was terminated in 2019 before its official contractual end. Furthermore, during the data collection period, the agency was undergoing significant restructuring, including its management, resources and operations. Most noticeable were changes in its constellation of employees; that is, the previously large number of Western expatriates was reduced and replaced by local Chinese employees.

7.3.4.3 Service recipient—German mother company

The service recipient that this study focuses on was the Chinese subsidiary of a German industrial group. The group is considered a world leader in its product category. It was their aim to reach customers by providing innovative technologies,

emotional products and individual customer care to provide an overall unique experience.

7.3.4.4 Service recipient—Chinese subsidiary

The client's subsidiary (hereafter referred to as the client) was like the agency subsidiary located in Beijing. It was the headquarters of the group's numerous Chinese operations; hence, it is responsible for a variety of different representations, such as production facilities across the country. To serve the client's needs, the agency established a dedicated team that, depending on the project needs, partly worked at the client's site. Given access to the client's offices, we were able to collect observation notes on site.

7.4. RESULTS AND ANALYSES

7.4.1. SERVICE DESIGN PROCESS

Inspired by Stickdorn et al. (2018) and through the use of customer journey mapping (e.g. Rosenbaum et al., 2017) and service blueprinting (e.g. Bitner et al., 2008), we were able to break down the service design process and the interactions of the agency–client relationship into three distinct phases. We termed these phases project initiation and ideation and the development and launch phases. Furthermore, mapping the agency–client interactions also allowed us to identify critical touchpoints, pain points and experiences. Based on that, we were able to draw inferences about which phase of the service design process proved most significant for further investigation.

It showed that despite minor pain points, neither the initiation and ideation nor the launch phase proved to be particularly tricky for the agency–client relationship. Among other things, the actors experienced initial issues in establishing a common language or articulating and clarifying objectives and needs. However, based on the analysis of the actors' experiences, we concluded that these features did not represent significant concerns. For instance, the agency's head of digital expressed the following experiences concerning the initiation and ideation phase: *"We worked together very well and functioned together very well.* (…) *If you have mutual respect and you pull basically the project in the same direction (…), then most of the time the project is successful*" (Intv. HoD, 2018). Additionally, the launch phase proved straightforward, and our analysis did not indicate negative experiences during this phase.

Furthermore, the agency's Head of Digital expressed that clients, at this point of the project, were usually "*(…) very happy with our work, and they (…) they show you the value because they invite you more often deeper into their way of thinking (…) I think this is a way to show that they are happy with us (…)"* (Intv. HoD, 2018). Besides, our insights into internal documents, such as client ratings, general feedback, or customer

relationship management (CRM) KPIs echoed the perception of the Head of Digitals. Lastly, it became apparent that the conclusion of one project launch usually led to the initiation of the next, which strengthened the notion of looking elsewhere for relationship pain points.

Instead, we made a find in the development phase. Here, our analysis revealed substantial issues in the interaction between the agency and the client. For example, the actors were regularly occupied with trying to understand each other instead of making progress on project deliverables. *"(...) you feel like you run against a wall all the time"* (Intv. GECD, 2018). Moreover, the client was often unsatisfied with the deliverables produced and required rework, which caused low satisfaction levels on both sides. "*They are still running their projects with us because there is no other alternative, to be honest, but the satisfaction level is low because the expectations are completely different (...)"* (Intv. MD, 2018a). In conclusion, the service design process analysis clarified that focusing on interactions during the development phase of the service design process would be fruitful.

7.4.2. SERVICE DESIGN OBJECT

To analyse the service design process issues during the development phase, we took inspiration from Secomandi and Snelders (2011), focusing on the service design object. Therefore, we explored the issue at hand from the perspective of actor touchpoints and their three critical elements: the exchange relation, interface and infrastructure, and materiality.

7.4.2.1 Exchange relation

First, we approached the exchange relation analysis by investigating its context, which defines particular actor roles (Secomandi & Snelders, 2011), and its institutions of value assessment (Koskela-Huotari & Vargo, 2016). The analysis of our interviews revealed that the client attained a somewhat passive attitude. *"(...) the client is actually very comfortable in this very laid-back version, they brief the agency, they are busy with other work, and two weeks later the Agency has to come and entertain them"* (Intv. HoD, 2018). Coming from an understanding that effective service design relationships should be characterised by active customer involvement (Edvardsson & Olsson, 1996), we understood that the passive attitude of the client posed a potential challenge for the agency. In opposition to the client, we found that the agency had taken an agile and proactive attitude: *"I think the biggest obstacle we are fearing is inflexibility"* (Intv. MD, 2018b). It was apparent that the agency and client had different ideas about how their interaction should take place. However, the agency's Managing Director clarified that *"our job is, our business is servicing clients. That means I should not, and I think no one in this agency should think that our clients, are bothering us, or are complicated etc. I think it is about finding the right mentality to service clients at a very high level"* (Intv. MD, 2018a). This pragmatic perception was

echoed by the agency's Senior Art Director: *"For me, working for clients is not so much about liking it or not. At first, it is about, do you want to work or not"* (Intv. SAD, 2018). Lastly, the Managing Director also clarified that they are very well aware of potential differences, which is why it was common practice to engage in expectation management at the beginning of each project. *"(...) this is also something we are clarifying right from the beginning, that we have different kinds of service levels, different kinds of expectations. Expectation management at the beginning, I think, is the key to really keep up the service to a good level" (Intv. MD, 2018a).*

Given the understanding that the roles were not substantial issues that could have led to the termination of the relationship, we moved on to analysing the actor's institutional characteristics. We did this by triangulating data from the interviews as well as utilising internal and public documents (Table 13 and Table 14). Our understanding of institutional logics was inspired by G-D logic and S-D logic, as introduced in the previous theoretical section (Vargo & Lusch, 2018; Lusch & Vargo, 2006). Edvardsson et al. (2014) and Koskela-Huotari and Vargo (2016) suggest that understanding institutions in resource-integrating contexts requires a broader, more holistic view. Therefore, we included the agency's and client's mother companies in the analysis of the institutional logics (Figure 8). We concluded that an S-D logic characterised the agency, and a G-D logic characterised the client. It is important to note that just like Vargo and Lusch (2018) and Lusch and Vargo (2006), we acknowledged that logics are neither black nor white. However, for simplicity, our inquiry was limited to the views of S-D logic and G-D logic.

The following highlights a variety of statements that help understand our conclusion of the institutional logics from our interviews. The agency's Senior Art Director expressed that *"the client input is the most valuable thing. So, the client has to be at the core. (...) you want to serve the client's needs as best as possible. Services are actually something very difficult for people to process. Usually, it is very difficult to put a price on what services entail (...). It is very personalised and at the same time very difficult to pursue the value"* (Intv. SAD, 2018). We understood this and other similar statements as examples of S-D logic. In our view, they were expressions of solution building, an understanding of services being value propositions and evaluated in context (Vargo & Lusch, 2018). On the other hand, we learned the following about the client: *"(...) it's normally quite pragmatic, they give you a briefing (...) then you have to do your homework"* (Intv. HoD, 2018). The agency's Global Executive Creative Director elaborated that "(…) *everybody is of course also facing a lot of work,(...) often the time that needs to be invested into things, is not there, and the people get impassionate. If people get impassionate, they get unsatisfied and so and so.* (…) *I would say the current service process is still very old fashioned. (...) it is very traditional and less flexible"* (Intv. GECD, 2018). We interpreted these client-specific expressions as examples of a G-D logic. Among other things, it exemplified a value-in-exchange driven perspective in which value would not be the result of

mutually beneficial resource integration and co-creation but of simple transactions of service features (Vargo & Lusch, 2018).

However, despite the differences in the agency's and client's institutional logics, from 2015 to 2017, the actors completed the first retainer agreement successfully. Following the completion, the relationship was rewarded with a second retainer agreement spanning from 2018 to 2020. These achievements align with Greenwood et al. (2011), who claim that firms can manage conflicting institutional logics through effective customer process management. Nevertheless, in 2019 the client decided to terminate the agency's business relationship before the official contractual end in 2020.

7.4.2.2 Interface, infrastructure and actualisation

Due to the longitudinal approach of the study, we could see that a result of the agency's restructuring efforts was a substantial change in the agency's personnel. As a consequence, the resource constellation of the agency was altered significantly. Previously, a large share of the employees was made up of experienced Western expats. After the restructuring, most Western employees were exchanged for more affordable and sometimes less experienced Chinese employees. Besides, the overall number of employees was reduced by almost 50 per cent. In addition to general personnel changes, new Chinese managers were implemented to supersede the previously mostly German management by the end of 2018. Also associated with these changes, new processes were introduced.

In our case, the agency–client relationship interface can be considered the agency's project team presence at the client site. In particular, humans and their interactions can be understood as resources and the physical embodiment of the interface (Secomandi & Snelders, 2011). From interviewing the managing director, we understood that the new personnel who formed the project team at the client site lacked some capabilities. This lack exists specifically in terms of their ability to deal with the inherent institutional complexity (Greenwood et al., 2011) of the agency–client relationship, as well as their understanding of how resources become valuable to the client (Koskela-Huotari & Vargo, 2016). "*We are ok with what we are sometimes delivering. I would wish that the guys are more looking into the future, more self-driven when it comes to servicing and creating the service character more; this is sometimes missing. They need to understand 360 degree what is the client's position in the market, the competitors, etc."* (Intv. MD, 2018a). It became clear that the new organisational resource constellation was not sufficient to take a holistic stance and reflect on enabling and constraining institutional elements (Koskela-Huotari & Vargo, 2016). "*I think just when they understand this, then they can serve the client in the best way. (...) So, when you are dealing with marketeers on the client-side, you have to understand what is his or her agenda, what is really behind the briefings you are getting. Does the person want to make a point internally, does he*

want to show off in front of his boss, etc." (Intv. MD, 2018a). During our visits to the customer site, we also witnessed a couple of insightful events. For instance, the agency and the client engaged in a variety of heated debates over service deliverables. We understood that the client requested further elaboration, presentation, or exemplification of how the service deliverables would serve its needs. The agency, on the other hand, was struggling to fulfil these requests. Essentially, the agency did not appropriately adjust to the ways the client was assessing resources. For example, during one of our visits to the client site, we observed that the agency wanted to present its work on a laptop during a meeting in the canteen, whereas the client was trying to sketch out things on paper. Another time, the agency brought printouts to a meeting in an open office; however, in this particular meeting setting, no table was available on which the visuals could be placed. Instead, the client would have preferred if the agency had used the available projectors to present and engage with the service deliverables. Because of these and other examples, we concluded that the agency was lacking an understanding of the clients' institutional logic of value assessment (Koskela-Huotari & Vargo, 2016). The agency was unable to establish adequate supporting infrastructure (e.g. processes and capabilities at the agency site—back end) as well as appropriate interfaces (e.g. human interactions at the client site—front end; Bitner et al., 2008; Secomandi & Snelders, 2011). Because of this, the agency was limited in its ability to actualise its service deliverables. In other words, the agency failed to provide tangible evidence of the benefits of its service to the customer.

Apart from capability aspects, we also speculate that cultural factors, such as working styles, may have played a role in the process. For instance, during our client site visits, we observed differences between the Chinese and Western employees in the way meetings were held and problems discussed. Thus, it could be possible that these differences further complicated the appropriate development of interfaces, infrastructures and actualisation mechanisms in alignment with the institutional client logic. Following this understanding, we argue that based on the client's negative experiences, the agency–client exchange relationship was adversely affected, ultimately leading to dark-side business-relationship manifestations.

7.4.3. DARK SIDE

To finalise the exploration of the elements that led to the termination of the case relationship, we first apply Abosag et al.'s (2016) classification of dark-side relational constructs: trust, commitment, uncertainty, conflict and opportunism. Table 15 provides a summary of the aspects of the relational constructs that affected the case relationship. Following this, we conclude by analysing the agency–client relationship governance mode inspired by Heide (1994).

Table 15. Dark-Side Relational Construct Developments

Dark Side Relational Constructs		Identified Issues	
		Developments	**Characteristics**
Positive	Trust	Decreasing	The client started to question the agency's abilities and competencies. The agency was experiencing less operational freedom.
	Commitment	Decreasing	The client was less committed, e.g. information withheld and fewer resources were allocated.
Negative	Conflicts	Increasing	The agency-client relationship was experiencing increasing difficulties of working together. Conflicts were inappropriately managed.
	Uncertainty	Increasing	Communication between the agency and the client became increasingly complex, which affected their prediction capabilities negatively.
	Opportunism	Increasing	The client started to act opportunistically, e.g. by complicating value creation for the agency.

7.4.3.1 Positive relational constructs

As elaborated in the previous section, we argue that the agency failed to create appropriate customer interfaces and make the service deliverables tangible to the customer because it was unable to realise the customer's institutional logic and, thus, the working of its value assessment. Furthermore, we understand that this failure adversely affected the client's trust in that the client started to question the agency's abilities and competencies, which relates to performance-related trust (Miyamoto & Rexha, 2004; Johnson & Grayson, 2005). Consequently, the agency experienced increasing pressure from the client: "*It is more like a top-down approach, I tell you, you execute"* (Intv. HoD, 2018). In particular, the agency experienced a decreasing degree of freedom, as expressed by the Global Executive Creative Director, who argued that *"you do not need to tell the agency which media you want to use*, (…) *I think it is really getting better the more freedom you have there"* (Intv. GECD, 2018).

Furthermore, the agency–client relationship was increasingly characterised by less client commitment. Based on the interview data, we interpreted these developments as the first signs of fading expectations that the business relationship would continue in the future (Dwyer et al., 1987; O'Malley & Tynan, 1997). *"What I absolutely do not like is if the client uses an agency just to do whatever they have in mind without actually being able to really tell what they want (...), quite often they just judge things without being actually being part of a project and not being involved, but really like a laid back arrogant answer"* (Intv. HoD, 2018). Although O'Malley and Tynan (1997) highlight that diverging degrees of commitment to business relationships are not uncommon, we realised it was reaching alarming extents. Thus, it became apparent that the client was withholding certain information and lowered its resource allocation efforts. *"You can just work very well when you work hand in hand with*

your clients. Lots of clients do not understand this. They believe that we are a service provider who is just coming up with ideas, and they judge. What they do not understand is that when we work as partners together and develop things together, we are more efficient, and the outcomes are better, and we are matching their real needs" (Intv. MD, 2018b).

7.4.3.2 Negative relational constructs

As the positive relational constructs were increasingly under pressure, negative relational constructs established themselves. Therefore, actors experienced difficulties working together, causing conflicts between the agency and the client. Much of the conflict centred on disagreements over how to achieve project goals, which led to the agency struggling to meet the client's expected performance (Chenet et al., 2000). *"It is getting more difficult; it is more performance-driven (...)"* (Intv. GECD, 2018). In addition to that, conflict was also caused by interpersonal frictions and incompatibilities (Rose & Shoham, 2004). *"To be honest, if you do not have a certain level of empathy, I think you are wrong in the business, you need it, it is very very important. Clients mostly do not have it"* (Intv. MD, 2018b). Edvardsson et al. (2014) highlight that conflict can benefit business relationships as it provides opportunities to engage in a lively discussion. However, they also highlight that it requires taking a positive attitude. As Koskela-Huotari and Vargo (2016) describe it from an institutional perspective, it depends on enabling institutional elements. Failing to focus on this can create unwanted stress and can have negative implications for the relationship. However, based on our observations and statements from the Global Executive Creative Director, we concluded that neither the agency nor the client had a positive perception of conflict or discussions, respectively. "*It keeps changing and changing, sometimes 20 times. I think this is a waste of time that causes frustration on both sides"* (Intv. GECD, 2018).

In addition to conflicts, the agency–client relationship experienced increasing degrees of uncertainty. On the one hand, both actors experienced environmental uncertainties, such as changing market and government structures, which can erode trust and commitment. On the other hand, and more prominently, however, the actors experienced growing relationship uncertainty. In particular, the agency was challenged by insufficient client information or communication. Because of that, they had difficulties in predicting and managing outcomes with confidence (Achrol & Gundlach, 1999). *"A lot of things are just done by email. Sometimes it is not even a document attached, it is just an email.* (…) *I think it is, how do you say that? It is suffering"* (Intv. GECD, 2018). Following Morgan and Hunt (1994), we perceived an increase in uncertainty as an adverse outcome of decreasing trust. A striking indication of this uncertainty was reflected in the degree of surprising changes in the agency and client interaction. "*I have had the experience that in the meeting are two other people, so it's three people attending a client meeting. They do not have the same opinion when they leave the room"* (Intv. GECD, 2018). *"(...) so many things are changing.*

The market of the client, maybe internally at the client, maybe some political dimensions are coming in, maybe people are changing in the management (…)"(Intv. MD, 2018b).

Previous studies have identified uncertainty to negatively impact trust, commitment and the long-term orientation of business partners. Scholars argue that it can also lead to opportunistic behaviour (Heide, 1994; Heide et al., 2007; Samaha et al., 2011). Our visits and interviews at the client site, indeed, made it apparent that the client began acting opportunistically. For example, the client added complexity to the communication, withheld information, and complicated value creation for the agency. "*Of course, you need discussions and all that, but not a painful doing things over and over again. Using money, using time, wasting budget. That is frustrating for both sides"*(Intv. GECD, 2018). Lastly, we considered the power difference between the agency and the client as the genesis of the opportunistic behaviour (Provan & Skinner, 1989). These findings left us wondering about the role of interfirm governance in the agency–client relationship.

7.4.3.3 Governance

The agency–client relationship governance analysis was based on Heide's (1994) three-dimensional interfirm governance framework, including relationship initiation, relationship maintenance, and relationship termination. Our analysis unveiled that the agency–client relationship was characterised by a nonmarket governance form, which can be seen as bilateral or, in other words, relational. The following section presents more detailed insights into the specific characteristics that establish the conclusion.

In analysing the relationship initiation dimension, it became apparent that both sites engaged in a selective relationship entry process. We found that the actors were involved in various evaluation events. During this event, the client had the opportunity to evaluate aspects such as the agency's skills, qualifications, and credentials. At the same time, the agency had the chance to assess the client's needs, goals and budgets. According to Heide and John (1990), such a selective supplier verification process can provide safeguards to relationship-specific investments and facilitate adaptation to uncertainty. The data also revealed that later in the initiation and ideation phase, the client invited the agency for an individual meeting. In the meeting, both actors followed up on open questions. They engaged actively in the assessment of features, such as attitudes, norms and values. Heide and John (1992) argue that norm evaluation (e.g. flexibility aspects or information exchange patterns) and an individually perceived match can create a vertical integration-like status between the actors. In other words, an overlap in norms can substitute for the need for actual vertical integration to prevent transaction risks.

Furthermore, our interviews and observation notes supported the exploration of the relationship maintenance dimension (Heide, 1994). For instance, we discovered that

the nature of the employees' roles involved in the interaction was complex and multidimensional. For example, during one of our visits, it became clear that a web design specialist of the agency was engaged in the agency's clearly defined role in developing web applications at the client site, while engaging in consulting and the educational activities of the client's employees. To our knowledge, these additional activities were clearly outside the defined scope of the web design specialist, thus implying bilateral governance.

Lastly, our interviews and meeting notes helped to analyse the relationship termination dimension (Heide, 1994). The data indicated that the agency and client subsidiary's relationship was based on a finite termination point. Given the client firm's policy, contracts had to be predetermined; thus, the client and the agency signed a three-year retainer contract. However, due to the agency's and client's long-lasting business history in China and abroad, the agency and the client's original expectations were that of an open-ended interaction that would subsequently result in a contract renewal. This expectation became particularly apparent through the agency's investment in "buyer-specific assets" (Heide & John, 1992; Heide, 1994), such as specialised and dedicated personnel, or tailoring software interfaces and processes following client-specific requirements. *Figure 10* summarises the chronology and key features of the analysis above visually.

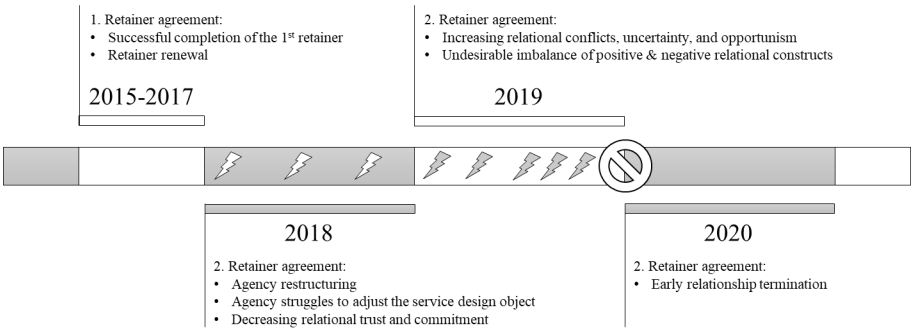


Figure 10. Relationship Timeline

7.5. DISCUSSION

This study investigated how and why the dark side manifests itself in B2B relationships among service co-creating actors in professional service design settings. We approached the research question abductively and followed a pragmatic tradition (e.g. Josephson & Josephson, 1994). An in-depth single case study was applied (e.g. Eisenhardt, 1989; Yin, 2018) to investigate a B2B relationship between the Chinese subsidiaries of two German companies: a creative agency and one of its strategically

important global clients. The empirical evidence obtained was analysed through the theoretical lenses of service design, service-dominant logic and institutional theory.

The analysis made it clear that the agency–client relationship was bilateral and based on close ties (Heide & John, 1990). Besides, appropriate contractual or relational safeguards were neither absent nor weak. Additionally, both actors have implemented a variety of safeguard mechanisms, such as asset-specific investments and an evaluation of institutional values, to ensure a positive working relationship. According to Heide and John (1992), such safeguard mechanisms are a sufficient foundation for successful interfirm relationships. Therefore, it is surprising that the agency–client relationship of the case was terminated despite favourable preconditions. Building upon the preceding analysis, we conclude that relationship termination did not happen due to a lack of or weak governance mechanisms.

Instead, we investigated the role of institutions in value co-creating actors in service design relationships. In doing so, we realised that different project phases might be subject to varying degrees of service design relationship complexities. We concluded that the service development phase of the project was most crucial to our case. Having zoomed in, we analysed how institutions affect the object of service design through their interfaces, infrastructures and actualisation mechanisms as the focal point of the interactions in the business relationship. Based on this analysis, we argue that value co-creating actors can manage diverging institutional logics successfully. However, failing to realise customers' institutional logics of value assessment (Edvardsso*n* et al., 2014; Koskela-Huotari & Vargo, 2016) and failing to adjust and align service interfaces, infrastructures and actualisation mechanisms accordingly (Shostack, 1987; Secomandi & Snelders, 2011) can affect the business relationship negatively. Furthermore, from our observations, we conclude that cross-cultural service design relationships may be faced with an increased risk of misunderstandings. In these cases, it is imperative for the service provider to reflect on different working styles and how information is processed.

Lastly, our study concludes that business relationships are neither black nor white. Positive dark-side relational constructs, such as trust and commitment, co-exist next to negative dark-side relational constructs, such as conflict, uncertainty and opportunism (Haakansson & Snehota, 1998). However, if value co-creating actors fail to align and adjust their service design object to institutional customer logics of value assessment, then business relationships can experience an erosion of positive and the establishment of negative dark side relationship constructs. The resulting imbalance of relational constructs should be addressed by building on positive institutional elements as early as possible; otherwise, it can lead to relationship termination (e.g. Heide, 1994; Rose & Shoham, 2004; Abosag et al., 2015, 2016). Figure 11 shows how the aspects of service design, institutions and dark-side relational constructs interrelate and determine the outcome in our case, as discussed above.

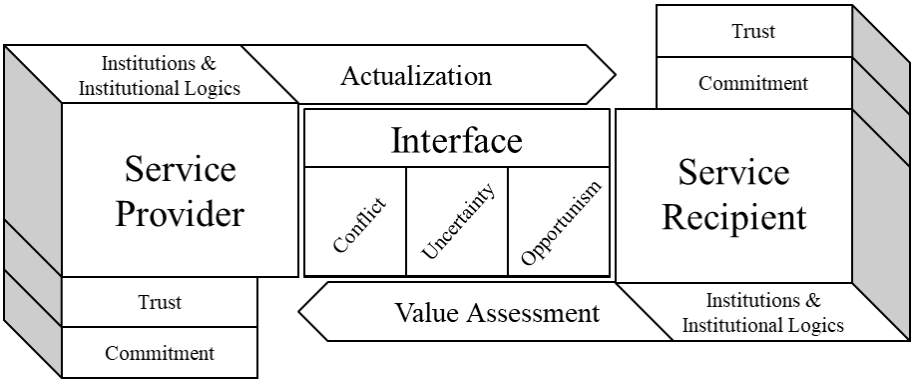


Figure 11. Relationship Termination Framework

7.6. CONCLUSION

7.6.1. MAIN FINDINGS AND CONTRIBUTIONS

The following is a summary of the most significant conclusions of our study on how and why the dark side manifests itself in B2B relationships between service co-creating actors in professional service design settings:

- Traditional safeguard mechanisms, such as asset-specific investments, may not be sufficient to avoid business relationship termination.

- Understanding actor institutions and their effects on customer value assessment are critical for successful service design. Consequently, value co-creating actors need to respond by aligning and adjusting service design interfaces, infrastructures and actualisation mechanisms to customers' institutional logics of value assessment.

- Value co-creating actors, particularly in international settings, need to be aware of cultural differences in, for instance, working styles or how information is processed.

- Failing to address customer institutions can lead to the erosion of positive relational constructs, such as trust and commitment, and can lead to the establishment of negative dark side relationship constructs, such as conflict, uncertainty and opportunism. Ultimately, an imbalance of positive and negative relational constructs can lead to relationship termination.

By unravelling the developments in the B2B service relationship, we contribute to service design research, which has traditionally been dominated by a B2C focus.

Furthermore, to date, with only a few exceptions (e.g. Koskela-Huotari & Vargo, 2016), most studies have not combined institutional theory with service research, particularly with service design. In doing so, we highlight the importance of institutions for the value assessment of resources at the object of service design, which is its interface and the related aspects of infrastructure and actualisation mechanisms (Secomandi & Snelders, 2011). Besides, by combining institutional theory with service design, we also respond to the calls of Ostrom et al. (2015), who encouraged the advancement of service innovation research by "leveraging service design", and Prestes Joly et al. (2019) by contributing to sharpen our understanding of the multiple perspectives of service designs (e.g. the object of service design). Lastly, we respond to the calls of Yang and Hsiao (2009), Tsou (2012), and Shi and Au-Yeung (2015) to contribute to more contextualised service innovation literature by conducting cases in Asian contexts.

Furthermore, despite the common top-down notion of institutional theory in reducing behaviour to macro-level factors, such as context (Schneiberg & Clemens, 2006), our study shows that micro-level factors, such as personnel, can also influence institutions. By zooming in to the business relationship interface as the object of service design, we highlight that the design of the interface, infrastructures and actualisation mechanisms can influence actor institutions and, subsequently, their value assessment of resources.

In addition, we respond to Abosag et al.'s (2015, 2016) calls to explore the dark side of business relationships by integrating the commonly separated streams of the development process of the relationship and the relational constructs. Our relationship termination framework (*Figure 11*) highlights the interconnectedness of actor institutions, the object of service design and dark-side relational constructs.

Our study's second aim was to propose suggestions for avoiding the establishment of negative dark side relationship constructs and, thus, potentially prevent relationship termination in professional service design settings between service co-creating B2B actors. Based on the learnings from our case, we propose the following points that could be relevant to managers:

- *Sharpen your mind*: First, value co-creating actors need to sharpen their service design mindsets. That means they will need to understand that successful service design in B2B relationships requires more than empathising customer needs and value-in-use. Actors also need to be empathetic about customer institutions on different levels of abstraction (e.g. macro, meso and micro) and reflect on how these may influence customers' value assessment (Koskela-Huotari & Vargo, 2016). We specifically emphasise the micro level, acknowledging the role of individuals. In general, value co-creating actors should be aware of the intangibility of institutions and institutional logics. Because of such intangibility, institutions can be

easily overlooked or considered too complex to address, which can lead to the establishment of negative dark-side relational constructs and potential project failure.

- *Monitor your relationships*: Second, value co-creating actors should monitor the well-being of their business relationships continuously through the service design project. As Haakansson and Snehota (1998) suggest, business relationships are neither black nor white; instead, dark and bright constructs co-exist. Furthermore, Samaha et al. (2011) explain that long-term business relationships are particularly prone to experience the emergence of dark-side relational constructs; thus, efficient monitoring becomes an even more critical undertaking.

Service design frameworks, such as customer journey mapping (Rosenbaum et al., 2017) and service blueprinting (Bitner et al., 2008), can help service providers to understand interaction touchpoints and customer experiences, such as pain points. Besides, service design can enable service providers to build an understanding of customer perceptions and their goals, for example, by developing personas. These insights can build the foundation for drawing inferences about customer institutions and their value assessment. Furthermore, service providers should be aware that these institutions may change or be expressed in different ways throughout the service design project. Therefore, breaking the project down into different project phases to zoom in without neglecting their interconnectedness may be beneficial. We suggest that, in particular, the actual development phase of the service design project requires a high degree of sensitivity because a great deal of the interactions takes place during this phase.

Lastly, practitioners in international settings need to consider potential cultural differences in, for example, working styles or how value co-creating actors process information. We suggest that it is of utmost importance for the service provider to engage in constant expectation management, especially in cross-cultural project settings. Otherwise, project teams may fail to realise differences in service-provider and customer institutions and, subsequently, how they assess value.

- *Act upon your monitoring results*: Value co-creating actors should address the development of negative dark-side constructs, such as conflict, uncertainty or opportunism as early as possible. Failing to do so will inevitably lead to relationship termination (Haakansson & Snehota, 1998; Fang et al., 2011; Abosag et al., 2015). The service provider can counteract the development of negative dark-side relational constructs through emphasis, enabling institutional elements (Seo & Creed, 2002; Vargo et al., 2015; Koskela-Huotari & Vargo, 2016). Furthermore, we suggest that value co-creating actors can counter these threats by engaging in dynamic capability-building activities (e.g. den Hertog et al., 2010). Furthermore,

value co-creating actors should consider the use of joint workshops at "special locations" (e.g. Rexfelt et al., 2011) or "living labs" (e.g. Salminen et al., 2015). These environments can help separate actors from their typical workplaces, enabling a focus on contextualised teamwork and avoiding distractions. Ultimately, service providers will need to continually adjust and align service interfaces, infrastructures and actualisation mechanisms with customers' institutional logics.

7.6.2. LIMITATIONS AND FUTURE RESEARCH

This study has several limitations. Rather than providing definite answers, the findings of this exploratory study should be seen as propositions that open avenues for future research. For instance, this study has exposed some limitations associated with the use of the qualitative single-case methodology. We acknowledge that qualitative studies have generalisability concerns, which is why we aimed for a robust description of the case. Thus, we hope to achieve analytical generalisability (Yin, 2017). We suggest that the best way to determine which findings apply to other cases beyond the geographical and industry limitations is to replicate the study elsewhere using not just qualitative but also quantitative or mixed-method techniques.

Furthermore, future studies may want to investigate cases that overcame the dark side of service design B2B relationships and how this was achieved, as they may provide insights into the development of new approaches and necessary capabilities. Additionally, other studies may want to investigate how service design can be utilised to address emerging negative dark-side relational constructs, such as conflict, uncertainty or opportunism. Lastly, the relationship between service design and institutions should be explored further; in particular, the role of the micro-level in institutional change as a catalyst for service innovation is considered a promising path.

REFERENCES

Abosag, I., & Lee, J.-W. (2013). The formation of trust and commitment in business relationships in the Middle East: Understanding Et-Moone relationships. *International Business Review*, 22(3), 602–614. doi: https://doi.org/10.1016/j.ibusrev.2012.09.002.

Abosag, I., Yen, D. A., & Barnes, B. R. (2016). What is dark about the dark-side of business relationships? *Industrial Marketing Management*, 55, 5–9. https://doi.org/10.1016/j.indmarman.2016.02.008.

Abosag, I., Yen, D. A. W., & Tynan, C. (2015). The dark side of business relationships: An overview. In The Dark Side of CRM: Customers, *Relationships and Management* (pp. 150–173). Taylor & Francis Group. https://doi.org/10.4324/9781315753737.

Achrol, R. S., & Gundlach, G. T. (1999). Legal and social safeguards against opportunism in exchange. *Journal of Retailing*, 75(1), 107–124. https://doi.org/10.1016/S0022-4359(99)80006-2.

Akaka, M. A., Koskela-Huotari, K., & Vargo, S. L. (2019). Advancing service science with service-dominant logic: Service ecosystems, institutions, and their implications for innovation. In P. Maglio et al. (Eds.), *Handbook of Service Science Volume II. Service Science: Research and Innovations in the Service Economy* (pp. 641–659). Springer.

Alejandro, T. B., Kowalkowski, C., da Silva Freire Ritter, J. G., & Marchetti, R. Z. (2011). Information search in complex industrial buying: Empirical evidence from Brazil. *Industrial Marketing Management*, 40(1), 17–27. https://doi.org/10.1016/j.indmarman.2010.09.006.

Barki, H., & Hartwick, J. (2004). Conceptualizing the construct of interpersonal conflict. *International Journal of Conflict Management*, 15(3), 216–244. https://doi.org/10.1108/eb022913.

Bitner, M. J., Ostrom, A. L., & Morgan, F. N. (2008). Service blueprinting: A practical technique for service innovation. *California Management Review*, 50(3), 66–94. https://doi.org/10.2307/41166446.

Brown, T., & Martin, R. (2015). Design for action. *Harvard Business Review*. 44(3), 58-63. https://doi.org/10.1109/EMR.2016.7559061.

Chenet, P., Tynan, C., & Money, A. (2000). The service performance gap: Testing the redeveloped causal model. *European Journal of Marketing*, 34(3/4), 472–497. https://doi.org/10.1108/03090560010311993.

Chung, H. F. L., Wang, C. L., Huang, P.-h., & Yang, Z. (2016) 'Organisational capabilities and business performance: When and how does the dark side of managerial ties matter? *Industrial Marketing Management*, 55, 70–82. https://doi.org/10.1016/j.indmarman.2016.02.014.

Dwyer, F. R., Schurr, P. H., & Oh, S. (1987). Developing buyer-seller relationships. *Journal of Marketing*, 51(2), 11-27. https://doi.org/10.2307/1251126.

Edvardsson, B. Kleinaltenkamp, M., Tronvoll, B., McHugh, P., & Windahl, C. (2014). Institutional logics matter when coordinating resource integration. *Marketing Theory*, 14(3), 291–309. https://doi.org/10.1177/1470593114534343.

Edvardsson, B., & Olsson, J. (1996). Key concepts for new service development. *Service Industries Journal*, 16(2), 140-164. https://doi.org/10.1080/02642069600000019.

Eggert, A., & Ulaga, W. (2002). Customer perceived value: A substitute for satisfaction in business markets?. *Journal of Business & Industrial Marketing*, 17(2/3), 107–118. https://doi.org/10.1108/08858620210419754.

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532–550. https://doi.org/10.5465/amr.1989.4308385.

Fang, S.-R., Chang, Y.-S., & Peng, Y.-C. (2011). Dark side of relationships: A tensions-based view. *Industrial Marketing Management*, 40(5), 774–784. https://doi.org/10.1016/j.indmarman.2011.02.003.

Friedland, R., & Alford, R. R. (1991). Bringing society back in: Symbols, practices and institutional contradictions in the new institutionalism in organizational analysis. In W. W Powell, & P. J. DiMaggio (Eds.), *In The New Institutionalism in Organizational Analysis* (pp. 232–263). Chicago University Press.

Gallouj, F., & Weinstein, O. (1997). Innovation in services. *Research Policy*, 26(4–5), 537–556. https://doi.org/10.1016/S0048-7333(97)00030-9.

Gaski, J. F. (1984). The theory of power and conflict in channels of distribution. *Journal of Marketing*, 48(3), 9-29. https://doi.org/10.2307/1251326.

Gottfridsson, P. (2010). Development of personalised services in small business: An iterative learning process. *Managing Service Quality: An International Journal*, 20(4), 388–400. https://doi.org/10.1108/09604521011057504.

Greenwood, R. et al. (2011) 'Institutional Complexity and Organizational Responses', *The Academy of Management Annals*, 5(1), pp. 317–371. https://doi.org/10.1080/19416520.2011.590299.

Grönroos, C. (2008). Service logic revisited: Who creates value? And who co-creates? In G. Svensson (Ed.), *European Business Review*, 20(4), 298–314. https://doi.org/10.1108/09555340810886585.

Grönroos, C. (2011). A service perspective on business relationships: The value creation, interaction and marketing interface. *Industrial Marketing Management*, 40(2), 240–247. https://doi.org/10.1016/j.indmarman.2010.06.036.

Haakansson, H., & Snehota, I. (1998). The burden of relationships or who's next. In P. Naude, & P. Turnbull (Eds.), *Network Dynamics in International Marketing* (pp. 16–25). Pergamon.

Heide, J. B. (1994). Interorganizational governance in marketing channels. *Journal of Marketing*, 58(1), 71. https://doi.org/10.2307/1252252.

Heide, J. B., & John, G. (1988). The role of dependence balancing in safeguarding transaction-specific assets in conventional channels. *Journal of Marketing*, 52(1), 20-35. https://doi.org/10.2307/1251683.

Heide, J. B., & John, G. (1990). Alliances in industrial purchasing: The determinants of joint action in buyer-supplier relationships. *Journal of Marketing Research*, 27(1), 24-36. https://doi.org/10.2307/3172548.

Heide, J. B., & John, G. (1992). Do norms matter in marketing relationships? *Journal of Marketing*, 56(2), 32-44. https://doi.org/10.2307/1252040.

Heide, J. B., Wathne, K. H., & Rokkan, A. I. (2007). Interfirm monitoring, social contracts, and relationship outcomes. *Journal of Marketing Research*, 44(3), 425–433. https://doi.org/10.1509/jmkr.44.3.425.

den Hertog, P., van der Aa, W., & de Jong, M. W. (2010). Capabilities for managing service innovation: Towards a conceptual framework. *Journal of Service Management*, 21(4), 490–514. https://doi.org/10.1108/09564231011066123.

Heskett, J. (2017). Design and the creation of value (1st ed.). Bloomsbury Academic.

Ho, A., Sharma, P., & Hosie, P. (2015). Exploring customers' zone of tolerance for B2B professional service quality'. *Journal of Services Marketing*, 29(5), 380–392. https://doi.org/10.1108/JSM-06-2014-0212.

Intv. GECD. (2018). Pilot interview: Global executive creative director.

Intv. HoD. (2018). Pilot interview: Head of digital.

Intv. MD. (2018a). Pilot interview: Managing director.

Intv. MD. (2018b). Semi-structured interview: Managing director.

Intv. SAD. (2018). Pilot interview: Sr. art director.

Johnson, D., & Grayson, K. (2005). Cognitive and affective trust in service relationships. *Journal of Business Research*, 58(4), 500–507. https://doi.org/10.1016/S0148-2963(03)00140-1.

Josephson, J. R., & Josephson, S. G. (1994). Abductive inference: Computation, philosophy, technology. Cambridge University Press.

Kindström, D., & Kowalkowski, C. (2009). Development of industrial service offerings: A process framework. *Journal of Service Management*, 20(2), 156–172. https://doi.org/10.1108/09564230910952753.

Koskela-Huotari, K., & Vargo, S. L. (2016). Institutions as resource context. In Professor A. Rodoula, & H. Tsiotsou, *Journal of Service Theory and Practice*, 26(2), 163–178. https://doi.org/10.1108/JSTP-09-2014-0190.

Kostova, T., Roth, K., & Dacin, M. T. (2008). Institutional theory in the study of multinational corporations: A critique and new directions. *Academy of Management Review*, 33(4), 994–1006. https://doi.org/10.5465/amr.2008.34422026.

Legner, C., & Vogel, T. (2007). Design principles for B2B services - An evaluation of two alternative service designs. *In Proceedings - 2007 IEEE International Conference on Services Computing, SCC 2007*. https://doi.org/10.1109/SCC.2007.50.

Lindgreen, A., & Wynstra, F. (2005). Value in business markets: What do we know? Where are we going? *Industrial Marketing Management*, 34(7), 732–748. https://doi.org/10.1016/j.indmarman.2005.01.001.

Lusch, R. F., & Nambisan, S. (2015). Service innovation: A service-dominant logic perspective. *MIS Quarterly*, 39(1), 155–175. https://doi.org/10.25300/MISQ/2015/39.1.07.

Lusch, R. F., & Vargo, S. L. (2006). Service-dominant logic: Reactions, reflections and refinements. *Marketing Theory*, 6(3), 281–288. https://doi.org/10.1177/1470593106066781.

Lusch, R. F., & Vargo, S. L. (2014). Service-dominant logic: Premises, perspectives, possibilities. Cambridge University Press. https://doi.org/10.1017/CBO9781139043120.

Maglio, P. P., & Spohrer, J. (2008). Fundamentals of service science. Journal of the *Academy of Marketing Science*. https://doi.org/10.1007/s11747-007-0058-9.

Miyamoto, T., & Rexha, N. (2004). Determinants of three facets of customer trust. *Journal of Business Research*, 57(3), 312–319. https://doi.org/10.1016/S0148-2963(01)00327-7.

Mooi, E. A., & Frambach, R. T. (2012). Encouraging innovation in business relationships—A research note. *Journal of Business Research*, 65(7), 1025–1030. https://doi.org/10.1016/j.jbusres.2011.03.016.

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20-38. https://doi.org/10.2307/1252308.

Nakano, D. (2011). Modular service design in professional services: A qualitative study. International *Journal of Services and Operations Management*, 9(1), 1-17. https://doi.org/10.1504/IJSOM.2011.040318.

Nordin, F., & Kowalkowski, C. (2010). Solutions offerings: A critical review and reconceptualisation. *Journal of Service Management*, 21(4), 441–459. https://doi.org/10.1108/09564231011066105.

North, D. C. (1990). Institutions, institutional change and economic performance, institutions, institutional change and economic performance. Cambridge University Press. https://doi.org/0.1017/CBO9780511808678.

O'Malley, L., & Tynan, C. (1997). A reappraisal of the relationship marketing constructs of commitment and trust. In The AMA Relationship Marketing Conference.

Ostrom, A. L., Parasuraman, D. E. B., Patricio, L., & Voss, C. A. (2015). Service Research Priorities in a Rapidly Changing Context. *Journal of Service Research*, 18(2), 127–159. https://doi.org/10.1177/1094670515576315.

Ostrom, E. (2005). Understanding institutional diversity. Princeton University Press. https://doi.org/10.1057/palgrave.ces.8100208.

Ouchi, W., & Williamson, O. E. (1977). Markets and hierarchies: Analysis and antitrust implications. *Administrative Science Quarterly*, 22(3), 540-544. https://doi.org/10.2307/2392191.

Patrício, L., Gustafsson, A., & Fisk, R. (2018). Upframing service design and innovation for research impact. *Journal of Service Research*,21(1), 3-16. https://doi.org/10.1177/1094670517746780.

Prestes Joly, M., Teixeira, J. G., Patricio, L., & Sangiorgi, D. (2019). Leveraging service design as a multidisciplinary approach to service innovation. *Journal of Service Management*, 30(6), 681–715. https://doi.org/10.1108/JOSM-07-2017-0178.

Provan, K., & Skinner, S. (1989). Interorganisational dependence and control as predictors of opportunism in dealer-supplier relations. *Academy of Management Journal*, 32(1), 202–212.

Rexfelt, O., Almefelt, L., Zackrisson, D., Hallman, T., Malmqvist, J., & Karlsson, M. (2011). A proposal for a structured approach for cross-company teamwork: A case study of involving the customer in service innovation. *Research in Engineering Design*, 22, 153-171. https://doi.org/10.1007/s00163-011-0104-y.

Rose, G. M., & Shoham, A. (2004). Interorganizational task and emotional conflict with international channels of distribution. *Journal of Business Research*, 57(9), 942–950. https://doi.org/10.1016/S0148-2963(02)00490-3.

Rosenbaum, M. S., Otalora, M. L., & Ramírez, G. C. (2017). How to create a realistic customer journey map. *Business Horizons*, 60(1), 143–150. https://doi.org/10.1016/j.bushor.2016.09.010.

Ruiz-Alba, J. L., Soares, A., Rodriguez-Molina, MA., & Frias-Jamilena, D. M. (2019). Servitization strategies from customers' perspective: The moderating role of co-creation. *Journal of Business and Industrial Marketing*, 34(3), 628-642. https://doi.org/10.1108/JBIM-02-2017-0028.

Salminen, J., Rinkinen, S., & Khan, R. (2015). 'Developing a regional design support service. *info*, 17(4), 81–90. https://doi.org/10.1108/info-01-2015-0007.

Samaha, S. A., Palmatier, R. W., & Dant, R. P. (2011). Poisoning relationships: Perceived unfairness in channels of distribution. *Journal of Marketing*, 75(3), 99-117. https://doi.org/10.1509/jmkg.75.3.99.

Schneiberg, M., & Clemens, E. S. (2006). The typical tools for the job: Research strategies in institutional analysis. *Sociological Theory*, 24(3), 195–227. https://doi.org/10.1111/j.1467-9558.2006.00288.x.

Secomandi, F., & Snelders, D. (2011). The object ofservice design. *Design Issues*, 27(3), 20-34. https://doi.org/10.1162/DESI_a_00088.

Seo, M.-G., & Creed, W. E. D. (2002). Institutional contradictions, praxis, and institutional change: A dialectical perspective. *Academy of Management Review*, 27(2), 222–247. https://doi.org/10.5465/amr.2002.6588004.

Shaw, V., Shaw, C. T., & Enke, M. (2003). Conflict between engineers and marketers: The experience of German engineers. *Industrial Marketing Management*, 32(6), 489–499. https://doi.org/10.1016/S0019-8501(02)00258-4.

Shi, J., & Au-Yeung, A. Y. S. (2015). An innovation perspective on Chinese retailers' competitive advantage. *International Review of Retail, Distribution and Consumer Research*, 25(2), 120–144. Routledge. https://doi.org/10.1080/09593969.2014.982680.

Shostack, G. L. (1977). Breaking free from product marketing. *Journal of Marketing*, 41(2), 73-80. https://doi.org/10.2307/1250637.

Shostack, G. L. (1987). Service positioning through structural change. *Journal of Marketing*, 51(1), 34-43. https://doi.org/10.2307/1251142.

Stickdorn, M., Hormess, M. E., Lawrence, A., & Schneider, J. (2018) This is service design doing - Applying service design thinking in the real world (A practitioners handbook). O'Reilly Media, Inc.

Thornton, P. H., & Ocasio, W. (2008). Institutional logics. In R. Greenwood et al., *The SAGE Handbook of Organizational Institutionalism* (pp. 99–129). SAGE Publications Ltd. https://doi.org/10.4135/9781849200387.n4.

Toivonen, M., Holopainen, M., & Tuominen, T. (2012). Involving customers in the service innovation process. In L. Macaulay et al., *Service Science: Research and Innovations in the Service Economy* (pp. 195–208). Springer.

Tsou, H. T. (2012). Collaboration competency and partner match for e-service product innovation through knowledge integration mechanisms. *Journal of Service Management*. 23(5), 640–663. https://doi.org/10.1108/09564231211269810.

Tuli, K. R., Kohli, A. K., & Bharadwaj, S. G. (2007). Rethinking customer solutions: From product bundles to relational processes. *Journal of Marketing*, 71(3), 1-17. https://doi.org/10.1509/jmkg.71.3.1.

Ulaga, W., & Eggert, A. (2005). Relationship value in business markets: The

construct and its dimensions. *Journal of Business-to-Business Marketing*, 12(1), 73–99. https://doi.org/10.1300/J033v12n01_04.

Vargo, S. L., & Akaka, M. A. (2009). Service-dominant logic as a foundation for service science: Clarifications. *Service Science*, 1(1), 32-41. https://doi.org/10.1287/serv.1.1.32.

Vargo, S. L., & Akaka, M. A. (2012). Value co-creation and service systems (re)formation: A service ecosystems view. *Service Science*, 4(3), 207–217. https://doi.org/10.1287/serv.1120.0019.

Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: An extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, 44(1), 5–23. https://doi.org/10.1007/s11747-015-0456-3.

Vargo, S. L., Wieland, H., & Akaka, M. A. (2015). Innovation through institutionalization: A service ecosystems perspective. *Industrial Marketing Management*, 44, 63–72. https://doi.org/10.1016/j.indmarman.2014.10.008.

Vargo, S., & Lusch, R. (2018) .The SAGE handbook of service-dominant logic. SAGE Publications Ltd. https://doi.org/10.4135/9781526470355.

Wetter-Edman, K., Sangiorgi, D., Edvardsson, B., Holmlid, S., Gronroos, C., & Mattelmaki, T. (2014) 'Design for value co-creation: Exploring synergies between design for service and service logic. *Service Science*, 6(2), 106–121. https://doi.org/10.1287/serv.2014.0068.

Yang, D., Sheng, S, Wu, S., & Zhou, K. Z. (2018). Suppressing partner opportunism in emerging markets: Contextualizing institutional forces in supply chain management. *Journal of Business Research*, 90, 1–13. https://doi.org/10.1016/j.jbusres.2018.04.037.

Yang, H.-L., & Hsiao, S.-L. (2009). Mechanisms of developing innovative IT-enabled services: A case study of Taiwanese healthcare service. *Technovation*, 29(5), 327–337. https://doi.org/10.1016/j.technovation.2009.01.006.

Yin, R. K. (2017). Case Study Research and Applications (6th ed.). SAGE Publications Inc.

Yu, E., & Sangiorgi, D. (2018). Service design as an approach to implement the value co-creation perspective in new service development. *Journal of Service Research*, 21(1), 40–58. SAGE Publications Inc. https://doi.org/10.1177/1094670517709356.

Zomerdijk, L. G., & Voss, C. A. (2011). NSD processes and practices in experiential services. *Journal of Product Innovation Management*, 28(1), 63–80. https://doi.org/10.1111/j.1540-5885.2010.00781.x.

CHAPTER 8. UNLOCKING DIGITAL SERVITIZATION: A CONCEPTUALIZATION OF VALUE CO-CREATION CAPABILITIES[4]

Struwe, Sascha and Slepniov, Dmitrij

Aalborg University Business School (AAUBS), Denmark

Sino-Danish College (SDC), University of Chinese Academy of Sciences (UCAS), China

Abstract

Industrial and service firms alike are increasingly adopting digital servitization to achieve service-driven growth and establish a competitive advantage. Firms must develop sufficient capabilities to benefit from digital servitization, which is an underinvestigated topic in the literature. This study contributes to filling this gap by taking a service-dominant logic (SDL) perspective and focusing on value co-creation capabilities in B2B firms that offer digital service platforms and services based on them. The study draws on a multiple case study design involving leading cases from sectors such as manufacturing, engineering, and shipping. The findings identify a set of four value co-creation capabilities: digital literacy, aligning, reflecting, and coping. Moreover, the study highlights how these capabilities can facilitate value co-creation and, potentially, value co-production. For managers, the findings provide insights into what characterizes value co-creation capabilities in digital servitization, which can be used for capability evaluation and development.

Keywords: Digital Servitization, Value Co-creation, Capabilities, Business-to-Business, Digital Service Platform Services

[4] This article is in the 2nd review round in the Journal of Business Research

8.1. INTRODUCTION

The increasing proliferation of digital technologies is rapidly changing established patterns of value creation across B2B product and service firms alike (Gebauer et al., 2021; Porter & Heppelmann, 2014). To remain competitive, firms increasingly engage in digital servitization (Ardolino et al., 2018; Cimini et al., 2021). Paschou et al. (2020) define digital servitization as a transformative process in business models and ways of value creation to develop or improve existing services based on digital technologies.

According to service-dominant logic (SDL), these firms find themselves in emerging and relatively open service ecosystems, consisting of multiple interrelated actors that engage in resource integration using service platforms for exchange. Fundamental to SDL is the notion of value co-creation as the purpose of exchange (Vargo et al., 2008; Vargo & Lusch, 2016).

To achieve the benefits associated with digital servitization and value co-creation, firms must develop and nurture particular capabilities (Annarelli et al., 2021; Kamalaldin et al., 2020; Kohtamäki et al., 2019), contributing to improved efficiency in customization and delivery and increases in resource configuration effectiveness (e.g. customers need fit or novel solutions) (Ardolino et al., 2018; Coreynen et al., 2017).

Recent literature reviews show that studies exploring digital servitization capabilities primarily focus on the concept of dynamic capabilities (Annarelli et al., 2021; Kohtamäki et al., 2019). These capabilities are defined as competencies that enable firms to develop new products, services, and processes in response to changing market conditions (Teece, 2007; Teece et al., 1998). For example, Cimini et al. (2021) suggest that successful digital servitization depends on technical, methodological, personal, and social skills. Paschou et al. (2018) propose data analysis and management, digital content creation, soft skills, and innovation appetite as critical competencies. In comparison, Hasselblatt et al. (2018) argue for digital business model development, scalable solution platform building, value selling, value delivery, and business intelligence and measurement capabilities.

However, the literature analysis shows that few studies have focused on exploring digital servitization and value co-creation despite their centrality for value creation. For instance, Kamalaldin et al. (2020) emphasize the importance of complementary digitalization capability. Saunila et al. (2019) propose that value co-creation capability determines customer, market, and service orientation. Lenka et al. (2017) identify connect, intelligence, and analytic capabilities. Therefore, it is less surprising that various studies call for contributions that enhance our understanding of value co-creation capability conceptualization and its implications for value co-creation

(Cimini et al., 2021; Kohtamäki et al., 2019; Lenka et al., 2017; Paschou et al., 2020; Story et al., 2017).

Moreover, an increasing number of studies focus empirically on service platforms (e.g. Cenamor et al., 2017; Eloranta & Turunen, 2016), pointing towards their potential for value co-creation in digital servitization (e.g. Gebauer et al., 2020; Sklyar et al., 2019). Real-life observations also seem to support these propositions. An example is Hapag Lloyd, a leading multinational German shipping and container transportation company. For many years, Hapag Lloyd faced significant losses and tried to address this issue with classical cost reduction strategies, such as achieving synergies from mergers and acquisitions or contract renegotiations (DPA, 2014, 2018). However, it was not until a radical shift towards fully embracing digitalization, building on various digital service platforms, and integrating ecosystem actors, such as customers and third-party providers, that the firm began to grow its revenue such that it became the most profitable container carrier in 2020, as measured by profit per container (Schlautmann, 2020).

This study aims to bridge the highlighted gap in the literature by exploring the following questions: *1) What conceptualizes value co-creation capabilities in B2B digital servitization? 2) How do they contribute to new digital service platform development?* The study's main contributions to the digital servitization literature are the proposition of a set of four value co-creation capabilities: digital literacy, reflecting, aligning, and coping, including a detailed description of its characteristics. In addition, the study highlights how the proposed capabilities facilitate value co-creation and potentially value co-production in emerging service ecosystems.

8.2. THEORETICAL BACKGROUND

8.2.1. DIGITAL SERVITIZATION

Manufacturing and service firms alike face rapidly changing business environments, demanding responses to challenges such as changing customer preferences (Cusumano et al., 2015; Story et al., 2017) or high-tech commoditization (Kanninen et al., 2017; Shih, 2018). Due to these developments, firms have begun to complement or completely substitute their offerings with (advanced) services to ensure future competitive advantage. This strategy is termed servitization or the *"servitization of business"*, a concept initially introduced by Vandermewe and Rada (1988). They define servitization as firms offering *"bundles of customer-focused combinations of goods, services, support, self-service, and knowledge"*.

Moreover, while engaging in digitalization, servitizing firms make more and more use of digital technologies, such as cloud computing, big data analytics, and artificial intelligence (Ardolino et al., 2018; Lerch & Gotsch, 2015; Parida et al., 2019). The application of such technologies offers opportunities to develop unique,

individualized value propositions with higher quality and efficiency based on more intimate customer relationships and insights (Adrodegari et al., 2017; Ardolino et al., 2018; Grubic, 2018). These developments are conceptualized in digital servitization, defined as *"the development of new services and/or the improvement of existing ones through the use of digital technologies. These can be exploited to enable new (digital) business models, to find novel ways of (co)creating value, as well as to generate knowledge from data, improve the firm's operational and environmental performance, and gain a competitive advantage"* (Paschou et al., 2020).

However, despite the potential benefits, engaging in digital servitization is not without internal and external barriers and challenges. For instance, firms may face organizational resistance to change or scepticism towards the economic potential of digital services (Gebauer et al., 2005), as these imply a fundamental shift in the organizational culture (e.g. from product-centricity to service- and customer-centricity) (Mont, 2002; Saunila et al., 2019). On the demand side, customers may be hesitant to pay for services (e.g. freemium attitude) (Witell & Löfgren, 2013) or may be reluctant to engage in deeper collaboration (Matthyssens & Vandenbempt, 2010). Thus, the discussion above suggests that successful digital servitization can be linked to substantial investments in organizational development, such as building crucial capabilities (Baines et al., 2020; Struyf et al., 2021).

8.2.2. VALUE CO-CREATION CAPABILITIES IN DIGITAL SERVITIZATION

Recent studies emphasize that one outcome of digital servitization is enhanced value co-creation (Annarelli et al., 2021). Therefore, firms increasingly depend on their ability to engage in complicated and dynamic interactions to maximize value creation (Lerch & Gotsch, 2015; Ostrom et al., 2015; Parida et al., 2015; Paschou et al., 2020; Sjödin et al., 2020). For example, firms and customers may utilize shared digital platforms to facilitate connected product and service functionalities (Porter & Heppelmann, 2014), such as remote monitoring, predictive maintenance, digital twins, or continuous AI-based process optimization. In any of these examples, firms and customers interact (e.g. human-to-human, machine-to-machine, or a combination thereof) in the process of resource (e.g. data) integration, which produces value co-creation.

SDL conceptualizes value co-creation as a collaborative process involving various actors (e.g. solution providers and customers) in reciprocally beneficial resource integration (Vargo et al., 2008; Lusch & Nambisan, 2015). Another interaction-related yet rarely distinguished concept of SDL is value co-production, which is defined as customer involvement in service or value proposition development. Hence, value co-production is also value co-creation, but value co-creation does not need to be value co-production (Lusch & Vargo, 2018). These interactions occur in emerging service ecosystems consisting of multiple interrelated actors. In these systems, service

platforms, including digital ones, form the venues for resource integration or value co-creation. Service platforms serve this function because they leverage resource liquefication and enhance resource density, enabling effective and efficient actor interactions (Lusch & Nambisan, 2015).

Moreover, value is characterized as an experiential concept (Vargo et al., 2008; Vargo & Lusch, 2004). This means that the service provider cannot solely create value by exchanging products or services. Instead, value is determined by the beneficiary (e.g. customers) in applying the provided product or service (resource). In addition, this suggests that the service provider becomes an intermediary or facilitator of value creation (Vargo & Lusch, 2016). This fundamental shift in understanding how value is created also highlights additional challenges to the already existing complexity presented by digital servitization. For instance, as multiple actors take an active role in the value creation process, actors may face role ambiguities (e.g. vague role expectations, unclear role descriptions, and uncertain role scripts) (Sjödin et al., 2016). Additionally, actors may experience value co-destructions due to resource misintegrations, as different actors may have different interests and ideas of how resources should be best integrated (Echeverri & Skålén, 2011; Laud et al., 2019; Mustak & Plé, 2020). These examples emphasize that value co-creation is a dynamic and emerging process, highlighting the critical role of appropriate value co-creation capabilities in facilitating beneficial digital servitization outcomes (Struyf et al., 2021).

This implication links to the dynamic capabilities view (Teece et al., 1998; Teece & Pisano, 1994). Dynamic capabilities are defined as the *"subset of the competences or capabilities which allow the company to create new products and processes and respond to changing market circumstances"*. Teece (2007) explains that dynamic capabilities can be categorized into three types of capacities: the ability to sense and shape opportunities and threats, seize opportunities, and maintain competitiveness by reconfiguring organizational resources. Hence, dynamic capability theory is well suited to the study of service innovation (den Hertog et al., 2010) and value co-creation in digital servitization. It emphasizes the notion of fast-moving or changing open systems of interconnected actors, requiring the careful combination of various sources of value creation. However, the current literature provides little insight into what constitutes value co-creation capabilities in digital servitization (Cimini et al., 2021; Lenka et al., 2017; Parida et al., 2015; Struyf et al., 2021).

Apart from a few exceptions, a limited number of studies have contributed to this literature gap (see Table 16). Kamalaldin et al. (2020) argue that value co-creation relationships can only contribute to digital servitization if partners have competencies that can benefit one another. They propose the *"complementary digitalization capability"*. It emphasizes three critical abilities: 1) the ability to evaluate how partner capabilities may benefit the organization; 2) the ability to assess the benefits of integrating provider expertise and customer knowledge; and 3) the continuous

monitoring of partner capability development and the re-evaluation of complementarity fit. Saunila et al. (2019) concentrates on organizational orientations as determinants of value co-creation capabilities in digital servitization. They argue that these orientations allow firms to acquire knowledge about customers and other system actors (market), distribute knowledge within the firm, establish a shared understanding of its meaning, and initiate appropriate steps to propose superior resources in value co-creation. For these benefits to materialize, firm value co-creation capabilities need to entail: 1) customer orientation: the ability to realise and respond to emerging customer needs continuously; 2) market orientation: the ability to understand the dynamic firm environment, including markets, competition, and other external factors; and 3) service orientation: the ability to establish service centricity at the strategic, organizational, and individual levels. Lastly, Lenka et al. (2017) conceptualize three capabilities associated with value co-creation in digital servitization: 1) intelligence capability: the ability to set up hardware components, enabling the identification and capturing of information with limited human intervention; 2) connect capability: the ability to link digitalized products through contactless communication networks; and 3) analytical capability: the ability to turn accessible data into valuable insights and actionable instructions.

Table 16: Overview of Previous Research on Value Co-creation Capabilities in Digital Servitization

Author	**Main Findings**	**Capabilities**	**(Empirical) Context**	**Methodology /Data**
(Kamalal et al., 2020)	The study identifies four relational components that enable value co-creation in digital servitization: 1. Complementary digitalization capabilities 2. Relationship-specific assets 3. Digitally-enabled knowledge-sharing routines 4. Partnership governance	Complementary digitalization capability: 1. Assess the potential for combining. 2. Evaluate the benefits. 3. Monitor partners.	• Study of four Swedish provider–customer relationships engaged in digital servitization • From the manufacturing, telecom, forestry, and mining industries	• Exploratory multiple case study (4 cases) • 40 open-ended interviews with service providers and customers
(Saunila et al., 2019)	The study explores human factors emphasized in digital servitization when engaging in value co-creation. The findings highlight the critical role of customer orientation and emphasize that human factors may alter during the value co-creation process.	Value co-creation capability determinants: 1. Customer orientation 2. Market orientation 3. Service orientation	• Two small Finish service providers in the digital service outsourcing industry	• Exploratory multiple case study (2 cases) • Eight semi-structured interviews with service providers and five workshop sessions

(Lenka et al., 2017)	The study explains how digital servitization capabilities facilitate value co-creation with customers through perceptive and response mechanisms. The mechanisms expand the sphere of interaction by enhancing the breadth and depth of the provider–customer value in the co-creation process.	1. Intelligence capability 2. Connect capability 3. Analytical capability	• Four large European industrial manufacturing firms offering advanced services	• Exploratory multiple case study (4 cases) • 28 open-ended interviews with service providers

Table 16 and the discussion above show that the current contributions to conceptualizing value co-creation capabilities in digital servitization are indeed limited and somewhat fragmented. For example, studies have predominantly focused on manufacturing cases from Nordic countries, limiting their overall generalisability. Moreover, little attention has been paid to platform-based services such as remote monitoring, predictive maintenance, or shared self-service learning platforms despite their potential for value creation (e.g. integrated and automated efficiency enhancements). This gap is especially concerning, considering that the most valuable firms in the world predominantly consist of platform service providers and that value co-creation is increasingly drawn towards these services (Cutolo et al., 2021). Moreover, current conceptualizations of capabilities are detailed yet narrow in scope. Therefore, more research is needed to explain which value co-creation capabilities in digital servitization can support the development of new service offerings. Consequently, this study poses the following questions: *1) What conceptualizes value co-creation capabilities in B2B digital servitization? 2) How do they contribute to new digital service platform development?*

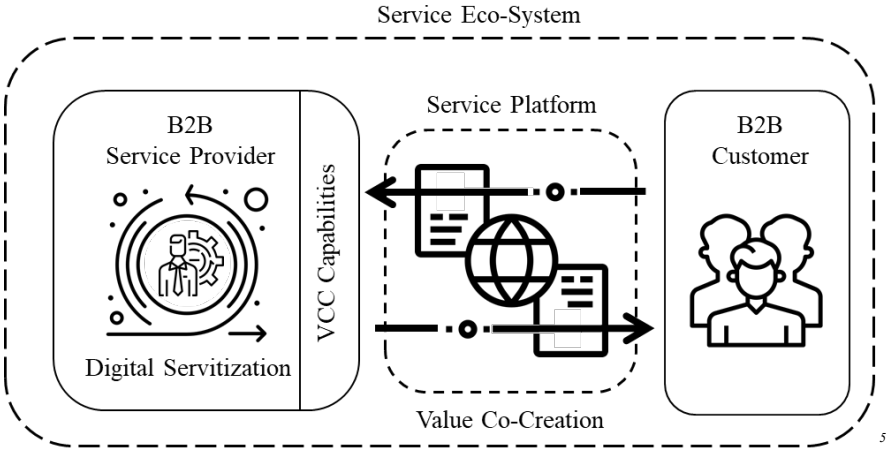


Figure 12: Characteristics of Value Co-creation Interactions in Digital Servitization Based on the Literature (Figure adapted from Lusch and Nambisan, 2015)

8.3. METHODOLOGY

8.3.1. RESEARCH DESIGN

This study applies an exploratory multiple case study to capture insights into the value co-creation capabilities of digital servitizing B2B firms offering digital service platforms and services based on them. The study decided to apply a multiple case research design for various reasons. First, the multiple case study approach is widely accepted and commonly used in the digital servitization literature (e.g. Lenka et al., 2017; Kamalaldin et al., 2020; Linde et al., 2021). Furthermore, the case study method is appropriate for researching a complex, contemporary, and evolving phenomenon and approaching theory building (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Yin, 2018), which applies to this study. A multiple case study design further enhances confidence in the findings, as it allows for the analysis of a range of similar and contrasting cases (Miles et al., 2019). Thus, multiple case studies can strengthen the findings, given their inherent replication strategy (Eisenhardt & Graebner, 2007; Yin, 2018).

8.3.2. DATA SELECTION

The study was explicitly interested in B2B cases that pursue the transformational process of digital servitization. Moreover, the cases were selected because of

[5] This figure has been designed using resources from Flaticon.com: Linector, Eucalyp, Surang, and Flatart_Icons

particular aspects of their value propositions. That is, the cases must offer digital service platforms and services based on them, such as digital prototyping and development platforms, to engage in value co-creation. Moreover, digital service platforms were exciting to this study, as limited research has considered them empirically in digital servitization. This lack of research is more surprising when considering their potential for value co-creation as venues for resource liquefication, density, and integration in service ecosystems (Lusch & Nambisan, 2015). Lastly, Paschou et al. (2020) argue that empirical research in the field of digital servitization has so far mainly focused on the machinery and equipment industry and single-sector studies. Therefore, to create a more holistic understanding of what conceptualizes value co-creation capabilities in digital servitization, this study included cases from industrial and service firms from multiple sectors. In addition, service firms were included, as research points out that the boundaries between product and service firms are increasingly blurry, and more and more service firms participate in digital servitization (e.g. Coombs & Miles, 2000; Huikkola et al., 2020; Vargo & Lusch, 2016).

Table 17: Overview Case Description

Case	Country	Industry	Type	# Employees	Digital Service Offering (Value Proposition)
Alpha (IND)*[1]	DE	Machinery/ equipment	MNE	>5.000	Operations/system analytics and management platform
Beta (IND)	DK	Machinery/ equipment	MNE	>20.000	Self-service application building platform (for products)
Gamma (IND)	DK	Engineering	MNE	<20.000	Operations/system analytics and management platform
Delta (IND)	DE	Engineering	MNE	>20.000	Operations/system analytics and management platform
Epsilon (IND)	CN	Equipment/ electronics	MNE	>100.000	Operations/system analytics and management platform
Zeta (SV)*[2]	DE	Banking/insurance	MNE	<5.000	Self-service application building platform (for services)
Eta (SV)	DE	Marketplace	SME	<1.000	Self-service application building platform (for services)
Theta (SV)	DE	Shipping	MNE	>10.000	Operations/system analytics and management platform
Iota (SV)	US	Consulting	MNE	>20,000	Operations/system analytics and management platform
Kappa (SV)	DE	Internet/e-commerce	SME	>500	Self-service application building platform (for services)
Lambda (SV)	DE	Consulting	SME	<500	Operations/system analytics and management platform

Legend:*[1] IND = Industrial Case; *[2] SV = Service Case

Table 17 shows an overview of the selected case characteristics. The following provides further insights into the included case digital service offering (value proposition). Overall, the study included two types of digital service platforms: operations/systems analytics and management platforms and self-service application

building platforms. First, operations/systems analytics and management platforms refer mostly to cloud-based machine and deep learning platforms. These platforms often build on underutilized customer data to enable services, such as connecting machines and equipment systems (IoT), digital twins, performance improvement (e.g. energy consumption, uptime improvement, and predictive maintenance), and training. Second, self-service application building platforms relate to virtual platform environments that enable customers to develop products or services independently. These platforms often utilize intuitive and straightforward development environments, building on predefined APIs, applications, and modularized and interoperable component building blocks. Service examples include prototyping, simulations (e.g. performance or probabilities), training, and customized solutions purchasing.

8.3.3. DATA COLLECTION

The study's primary data collection method was in-depth semi-structured interviews with senior individuals representing service innovation and digital transformation functions, such as the Head of Technology or Senior Innovation Manager. The informants were selected based on their accessibility and their knowledge about and involvement with the digital servitization process and digital platforms. The interviews were guided by an interview grid that included questions such as the following: *What role does digitalization play in your service offerings? How would you describe your digital service development process? Did the development and provision of digital services change something about the way you work? If so, how?* The study allowed for slight variations in the interview questions during the interviewing process to capture emerging insights. All interviews were conducted via video calls using MS Teams or Zoom in German or English, depending on the interviewee's language preference. In addition, with the permission of the interviewees, interviews were recorded for further data processing (e.g. transcription and coding).

Table 18: Overview of Data Collection

Case Pseudonym	Informants	Data	
		Primary	Secondary
Alpha (IND) *[1]	Head of Strategic Marketing and Corporate Communications; Head of Special Products and Business Development; Head of Customer Consulting	3x Interviews (33, 54,67 min)	Company documents, press releases
Beta (IND)	Senior Product Innovation Manager	1x Interview (60 min)	Press releases
Gamma (IND)	Head of Technology	1x Interview (50 min)	Press releases
Delta (IND)	Head of Service Product Lifecycle Management	1x Interview (44 min)	Press releases
Epsilon (IND)	Design Thinking Lead	1x Interview (41 min)	Press releases
Zeta (SV) *[2]	Senior Innovation Manager	1x Interview (57 min)	Press releases
Eta (SV)	Senior Product Innovation Manager	1x Interview (56 min)	Press releases
Theta (SV)	President, CEO	1x Interview (50 min) 4x Webinars (24, 40, 41, and 53 min)	Company documents, press releases
Iota (SV)	Product Innovation Lead	1x Interview (40 min)	Reports
Kappa (SV)	Executive Principal	1x Interview (37 min)	Reports
Lambda (SV)	Senior Team Lead, Product and Service Innovation	1x Interview (37 min)	Reports

*[1] IND = Industrial cases; *[2] SV = Services cases

In total, the study collected 13 interviews, ranging from 33 to 67 minutes. The interviews were conducted from November 2020 to February 2021. These interviews represent 11 cases, of which five are industrial and six are service cases. The number of interviews per case varied because of data access. Furthermore, the number of industrial-to-service cases varied because the study aimed to collect a nearly even number of codes to achieve a fair comparison of the data, making it necessary to include more service cases. In addition to the interviews, the study recorded four webinars and gained access to various secondary documents, such as company documents, reports, and press releases, in an effort to triangulate.

8.3.4. DATA ANALYSIS

The data analysis of this study was inspired by the tools of grounded theory (e.g. constant comparison and memoing) (Corbin & Strauss, 2014; Glaser, 1978), providing adequate means to theorize from complex datasets. Moreover, the analysis applied the systematic approach of grounded theory articulation proposed by Gioia et al. (2013), a process increasingly used in servitization research (e.g. Kamalaldin et al., 2020; Reim et al., 2019) to add *"qualitative rigour"* to the data analysis. This approach may be best described as a series of iterations and comparisons facilitating the

identification of categories, themes, and overarching and aggregated dimensions, enabling the development of an empirically grounded framework. In doing so, the study followed a three-step process described in more detail below.

The first step in the data analysis emphasized the analysis of all available primary and secondary raw data, including interview and webinar recordings, company documents, reports, and press releases. Utilizing the NVivo 13 data analysis software, each of these data sources was read multiple times to gain an in-depth understanding of its contents. During this process, relevant phrases and passages were coded, enabling the further identification of critical insights relevant to the analysis. Moreover, this process was done under the premise of maintaining source codes whenever possible and feasible (in-vivo). As a result, the study was able to derive first-order categories.

The second step of the study analysis utilized the generated first-order categories to explore connections and patterns serving two functions. It allowed the study to identify redundancies (e.g. categories articulating the same point in different words). It also enabled second-order themes to generate more distinct, higher-level concepts representative of various first-order categories. This process can be described as a constant back and forth between different levels of tentative understanding of the identified categories (first-order) in terms of connections and meaning, eventually reaching a point of saturation and enabling a confident conceptualization of 12 second-order themes.

The third step of the analysis led to the generation of the aggregated dimensions representative of the studies proposed value co-creation capabilities in digital servitization. The process of deriving the dimension follows the same approach described for the second-order themes above. Consequently, the study identified a set of four empirically grounded dimensions: digital literacy, reflecting, aligning, and coping. Figure 13 shows an overview of the data structure of this study.

8.4. ANALYSIS AND RESULTS

8.4.1. CAPABILITIES CONCEPTUALIZATION

Based on our empirical data analysis, we explored and conceptualized a non-exhaustive number of value co-creation capabilities in digital servitization, focusing on creating new platform services. The grounded theory–inspired analysis identified four capabilities: digital literacy, reflecting, aligning, and coping (see Figure 13 and Figure 14), which will be further detailed below.

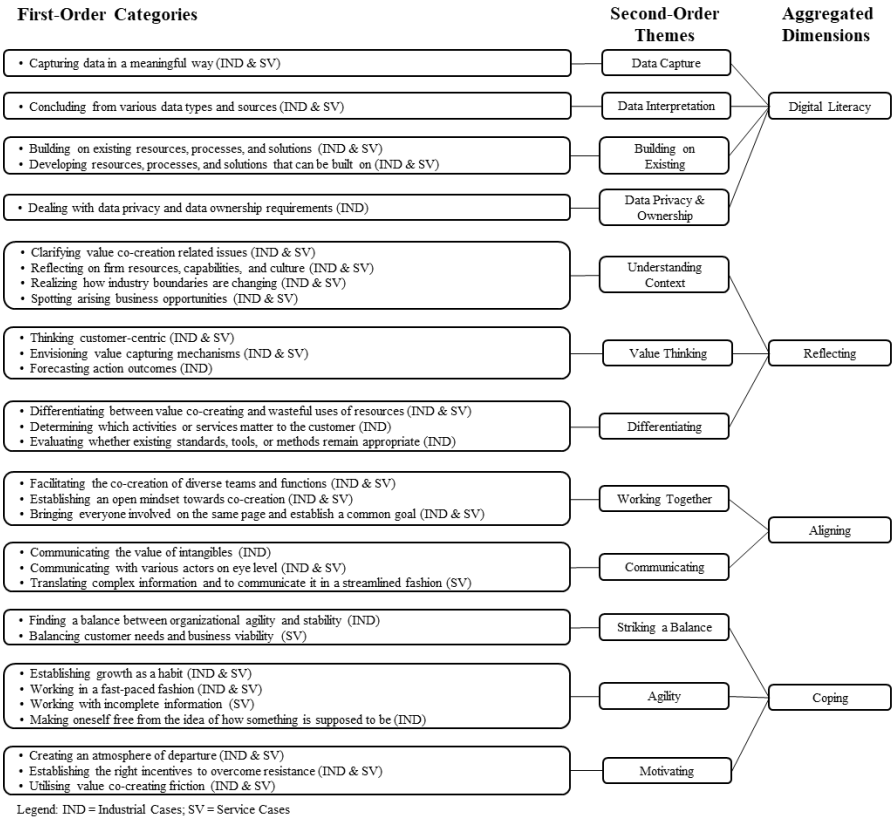


Figure 13: Data Structure and Coding Process—Value Co-creation Capabilities in Digital Servitization Capabilities

8.4.1.1 Digital Literacy Capability

Digital literacy capability represents the ability to identify and gather valuable data to develop effective value propositions in adherence to sensitive data rights. According to the analysis, capability entails four sub-themes. First, *data capture* refers to identifying and gathering data in a meaningful way. This means that it is necessary to prevent the data collection process from being chaotic, potentially leading to insufficient or incohesive datasets and complicating the process of generating valuable insights. It is also crucial to identify and collect the right data, enabling profound analysis and insights regarding specific questions that may arise during value co-creation. The Head of Special Products and Business Development (Alpha) states:

"During the operation of a machine park, significant amounts of data are generated. However, in order to optimise production, you must utilise data points that relate to your goal to be able to derive better decisions."

Second, the *data interpretation* theme refers to the ability to draw conclusions from various data types and sources. Two specific data types were identified in the analysis. Service case data mainly indicated unstructured, qualitative data, such as text documents or social media. In contrast, industrial case data predominantly indicated structured, quantitative data, such as numbers and metrics (e.g. performance or outage data of connected machines). What unites the cases is the ability to utilize the given data and formulate compelling value propositions in a structured fashion that adds value (e.g. unique assets) to value co-creating partners. The Head of Service Product Lifecycle Management (Delta) explains:

"We are answering questions, not one question. The goal is to reveal questions from the data that you never thought of asking. So, there is richness in there, in the insights."

Building on existing themes relates to the ability to develop resources, such as processes and service modules, that can be used in a modular fashion and re-bundled according to project needs. This entails thinking holistically, mapping interrelations between organizational departments and their development activities, and utilizing interoperable elements such as programming standards and open-source codes. Moreover, firms must establish a sense of shared ownership within the organization to avoid siloed and potentially unknown developments, which can be achieved using methods such as agile project management and lean frameworks. It is highlighted by the Head of Special Products and Business Development (Alpha) thus:

"At the end of the day, we often do not develop something completely new. It is more a combination of existing elements. However, this demands something like entrepreneurial thinking or holistic thinking. It is about thinking about existing resources in new contexts."

Lastly, the theme of *data privacy and ownership* stands for the ability to deal with data privacy and data ownership requirements in often complicated and sometimes ambiguous environments. For instance, Alpha exemplifies that it is crucial to gain the necessary permissions and form agreements to access data and run analytics in remote machine services, such as cloud-based production analytics. As the Head of Customer Consulting (Alpha) describes:

"The topic of data is becoming more and more interesting; you must always get the permission of the customer. You must ask questions such as: who owns the data, which data are we talking about, for what purpose do you want to use it, whom can we share it with, or where is this data, and how do we access it?"

8.4.1.2 Reflecting Capability

Reflecting capability refers to the ability to critically assess internal and external factors to adjust organizational characteristics to prepare the organization for the most effective value co-creation. The analysis revealed four sub-themes. First, the *understanding context* theme refers to the ability to critically assess value co-creation–related issues between the actors involved during their interactions. This knowledge allows for initiating adjustments to the approaches used for service development. As a result, actors must analyze firm resources, capabilities, and orientation (e.g. culture and mindsets). In addition, to direct interaction-related issues, it also becomes essential to understand changing industry boundaries and new emerging actor connections. Evaluating these developments becomes essential, as they may affect the firm's value creation. Thus, understanding context also entails spotting arising business opportunities or threats. The Senior Product Innovation Manager (Eta) notes:

"In principle, it is most important to understand the market first, who the actors are, how they act, and which problems they face (...) Then you must evaluate your strengths and weaknesses and which capabilities you have. And finally, you can identify business opportunities."

The *value thinking* theme relates to empathizing and developing a customer-centric mindset so that customer needs and the specificities of their business models (e.g. challenges or service use contexts) can be identified and understood. Based on these insights, it becomes possible to envision appropriate value capturing mechanisms, balancing costs, pricing, and sales models common to digital service platforms (e.g. freemium or cross-selling). Moreover, value thinking highlights the ability to enable customers to gain sufficient insight into the implications that may arise from incorporating service provider offerings into their operations. The Head of Technology (Gamma) emphasizes:

"It is going beyond just envisioning a product that has a market need; you also need to figure out how to capture value from that. Most businesses already struggled to fulfil the customer need, so this goes beyond that."

The *differentiating* theme refers to the ability to discriminate between activities that create value and those that do not. This consideration entails a limited firm resource base and strategic focus. It also entails the desire to propose the most valuable services to the customer. Hence, firms may ask questions such as the following: *Which investments can provide a long-term competitive advantage? What are the most effective marketing channels? How can we optimise internal and external communication during value co-creation internally and externally?* Therefore, essential organizational elements, such as standards, tools, or methods, must be constantly challenged to assess whether they remain suitable for achieving the best

possible value co-creation outcomes. The Head of Customer Consulting (Alpha) explains:

"For example, we have developed the first VR applications using Microsoft HoloLens. However, you must pay attention that the technology excites the customer and contributes value. You must stay pragmatic. In the end, we realized that an AR application on the smartphone would have been the better approach."

8.4.1.3 Aligning Capability

Aligning capability refers to the ability to facilitate the effective value co-creation interactions of diverse actors in digital servitization. The analysis identifies two sub-themes. First, the *working together* theme relates to the effective facilitation of the value co-creation process of diverse actors, such as internal teams and functions, or external actors, such as customers or suppliers. The data suggests that the collaboration of diverse actors can benefit value co-creation outcomes, as they can contribute with different perspectives and resources. However, to achieve the most beneficial interaction outcomes, focal actors must identify valuable actors who can contribute, for instance, through their unique expertise or skills. Moreover, the number of actors involved is also considered a complexity factor. Hence, focal actors must evaluate their ability to orchestrate dynamic value co-creation and adjust the group size accordingly. Other necessary aspects relate to establishing a positive mindset towards co-creation, bringing everyone involved on the same page to avoid confusion and friction, and establishing a common goal. The Head of Technology (Gamma) describes:

"What I am trying to achieve with my colleagues is like a future lab; we bring together different perspectives, expertise, and operations. We have our different backgrounds, and we need to be able to work together. Sometimes, the task is more or less complex. So you need the ability to work with more or less specialists."

The *communicating* theme relates to the ability to clearly express the value of intangibles, such as digital assets offered via the service platforms, in a compelling manner that enables external actors (e.g. customers) to appreciate the offered value and integrate these resources. Fostering this ability entails investing in changing the existing institutional logic (e.g. from product- to service-centric) and new sales methods (e.g. from selling features to outcomes). Moreover, when it comes to more direct actor-to-actor interactions, the analysis also highlights communicating on the same eye level as an effective means of communicating value. That means it becomes critical to speak in the same professional language (e.g. terminology) as other relevant actors and to communicate expertise, as this may benefit the development of trust and commitment. In addition, actors must be able to express complex subjects in a simple manner to avoid misunderstandings and to facilitate unobstructed value appreciation. The Head of Special Products and Business Development (Alpha) explains:

"My staff knows how to do it; they can communicate with the customer at an eye level. For example, a maintenance technician must discuss all kinds of technical issues of our digital product lines with a production manager. If customers notice that you are capable, they are also willing to listen and share insights."

8.4.1.4 Coping Capability

Coping capability refers to the ability to withstand and manage the complexities inherent in value co-creation in digital servitization. The analysis identifies four sub-themes. First, the *striking a balance* theme refers to the ability to strike a balance between organizational developments and established paradigms of understanding. Balancing focuses on internal transitioning efforts that affect the self-conception or identity of actors during the digital servitization process (e.g. who we are, what kind of organization we are, and what we are creating). It becomes essential to prevent organizational members from feeling overwhelmed with change. Balancing highlights the need to manage the duality of progress and rest, allowing actors to adjust and adapt. The analysis shows that it is helpful not to introduce changes too radically, as actors may find themselves experiencing an adverse unfamiliarity (e.g. finding oneself in a place one feels they do not belong). Thus, changes must integrate new aspects and maintain familiar aspects (e.g. using familiar mechanisms such as governance in new work contexts). As the Head of Service Product Lifecycle Management (Delta) explains:

"One of the dualities we are looking at is the balance between agility and stability during the transformation. We are not a start-up. If you have the existing complex systems with well-established governance mechanisms, you have lots of risks to manage, financial tooling, and resources you cannot just transform it all at once."

Second, the *agility* theme refers to the ability to establish learning and constant improvement as habits. It relates to an orientation that embraces problems as opportunities to learn and develop instead of seeing them as barriers or obstacles. Hence, internal and external actors involved in value co-creation must be able to work in a fast-paced, good enough fashion to provoke "failing" early. For instance, they may utilize minimally viable products for prototyping to enhance learning and reduce the risk of costly issues in later stages of the process. Moreover, actors must become comfortable working with incomplete information because it is difficult to predict certain outcomes accurately during dynamic value co-creation. Thus, actors must free themselves from how something is supposed to happen and keep an open mind to stay agile. The Senior Product Innovation Manager (Eta) points out:

"We often start very quickly and iteratively to prototype on paper, just to get an idea. It does not need to be fancy; it simply needs to exemplify the basic idea. However, you need people who are not risk-averse, people who like to try out many things for this type of approach. Typically, I do not have a clear roadmap."

The *motivating* theme refers to the ability to create an atmosphere of departure relating to the excitement for consecutive transformational changes and a sense of urgency that change is truly needed, driving value co-creation in digital servitization. To establish such an atmosphere, it becomes necessary to empathize with internal (e.g. employees) and external (e.g. customers) actors, identifying their concerns, needs, and circumstances. This understanding enables the creation of a metaphorical journey (similar to storytelling) to relate to the people and unite them in their efforts. However, these efforts may be met with resistance, making it critical to create the right incentives, which departs from the realm of conception to a more tangible activity. To achieve this, actors may utilize mechanisms such as monetary rewards and grant authorities or offer tools enabling easier workflows. Moreover, the theme highlights the ability to establish value-creating friction as a motivator. That means enabling actors to challenge one another constructively, for instance, by providing suitable environments or spaces (e.g. living labs), and to utilize these insights as a resource during value co-creation. The President (Theta) explains:

"We took a little bit of a carrot and stick approach to accelerate. We incentivize customers to create. But we also implemented new channels to push data and arrive at more efficient solutions. In my book, it is a fine balance in terms of, you know, how much do you give. You can sort of drive behaviour through incentives or disincentives."

8.5. DISCUSSION

Based on the analysis, the study will now discuss our findings and the proposed capabilities. Figure 14 and Figure 15 summarize the highlights of the discussion.

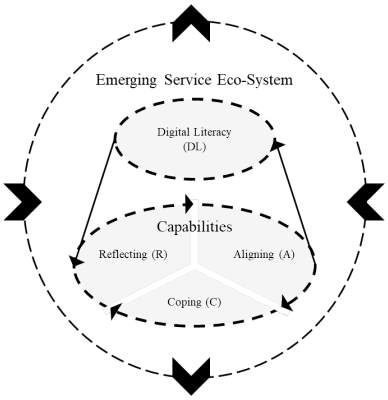


Figure 14: Emerging Service Ecosystems and Value Co-creation Capabilities in Digital Servitization

The study suggests that the proposed capabilities relate to one another and may come to play in a particular order (see Figure 14). Digital literacy capability may be understood as a prerequisite for reflecting, aligning, and coping capability. It enables the identification and collection of valuable data to develop compelling value propositions. These propositions may draw actors towards resource integration. Following this, it becomes critical to utilize the reflecting capability to critically evaluate the internal and external factors enabling the organization to prepare (e.g. decision-making confidence) for the most effective resource integration between the actors involved. During the interaction, the aligning capability facilitates the effective interactions of heterogeneous actors, while the coping capability ensures the continuous functioning of these interactions, withstanding and managing inherent complexities.

Moreover, the literature suggests that value co-creation occurs in emerging service ecosystems through loosely coupled actors engaging in resource integration and using service platforms as venues for these interactions (Vargo et al., 2008; Lusch & Nambisan, 2015). Hence, despite the sequential explanation of how capabilities may lead to value co-creation above, the emerging nature of the system implies that the proposed process of applying value co-creation capabilities cannot be a one-time event. Instead, the study suggests that actors need to apply capabilities in an iterative fashion of continuous cycles. Each cycle contributes to a better understanding of service ecosystem requirements and value co-creation opportunities, influencing value co-creation capability configuration. In addition, the types of services analyzed in this study, digital platforms, and services based on them indicate an ever-increasing pace of cycle run-through. For example, due to the modularization and standardization of digital service elements, actors can re-bundle service components, shortening and accelerating service innovation iterations. Similarly, market needs become more short-lived due to the responding technological change. Consequently, it can be argued that capability development cycles become more incremental and likely ongoing, further supporting the need for the proposed capabilities.

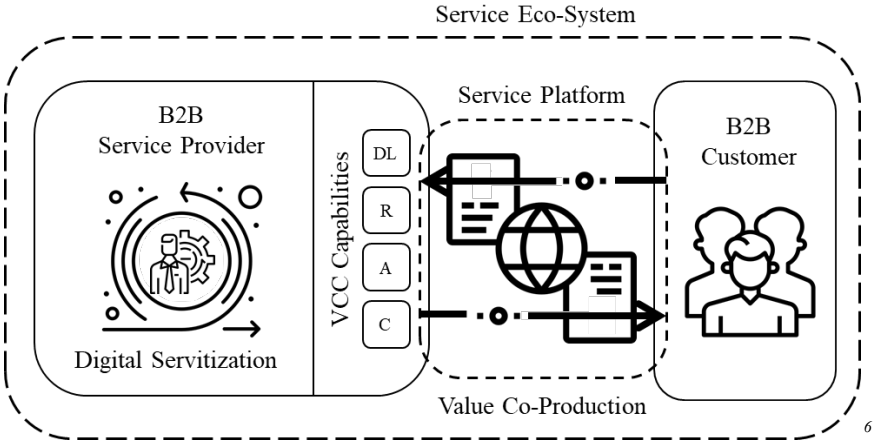


Figure 15: Framework for Value Co-creation Capabilities in Digital Servitization (adapted from Lusch and Nambisan, 2015)

Furthermore, the study argues that the proposed value co-creation capabilities facilitate actor value co-creation and enable value co-production, that is, customer involvement in new service development (see Figure 15). In addition, these outcomes may depend on the configuration or emphasis of the underlying capability sub-themes. For example, due to its understanding of market needs, a service provider may develop a digital service platform to promote services (e.g. open developer environments and supportive tools such as sandboxes). This development relates to the sub-theme data capture, data interpretation, and building on existing as part of digital literacy capability (see Section 8.4.1.1 and Figure 13). As a result of these developments, other actors may consider these resources valuable and integrate, thereby co-creating value. A stronger or additional emphasis on the sub-theme data privacy and ownership of the digital literacy capability or the aligning capability (see Sections 8.4.1.1 and 8.4.1.3, and Figure 13) highlights deep actor interactions with a common goal (e.g. shared service development), which leads to value co-production.

Based on the above, the study argues that value co-creation capabilities are not stable but fluent entities that can be shaped according to organizational needs, which aligns with the dynamic capabilities view (Teece, 2007). Their specific configuration (e.g. emphasis on specific sub-themes) may then determine how likely firms may achieve value co-creation or co-production. However, capabilities cannot be simply switched on and off to the organization's liking; instead, they are subject to resource restraints and path dependency (den Hertog et al., 2010). Therefore, it remains unclear to what

[6] This figure has been designed using resources from Flaticon.com: Linector, Eucalyp, Surang, and Flatart_Icons

extent actors will be able to address the previously proposed increasing pace of change and, with it, the related need to reconfigure or develop. Thus, it may be argued that the proposed sequence of resource applications may differ over time. For example, one might argue that coping capability may become more central due to the increasing organizational demands and pressure inflicted by system change. Hence, the study also proposes that actors' ability to value co-create and value co-produce may depend not only on whether they have the proposed capabilities but also at which stage in terms of readiness an organization may be.

Furthermore, the following arguments can be made when comparing the study's findings with the existing literature (see Section 8.2.2 and Table 16). Lenka et al. (2017) show that the identified intelligence, connect, and analytic capabilities enable resource integration (value co-creation) between the focal service provider and its customer. Moreover, they also identify the perceptive and responsive mechanisms, contributing to an increase in the breadth and depth of interaction. Arguably, Lenka et al.'s (2017) discovery can be seen as confirmative signs that these studies' capabilities indeed facilitate value co-creation and potentially enable value co-production. This claim becomes particularly evident as our conceptualized capabilities share common features. For instance, Lenka et al.'s (2017) analytical capability can be related to our digital literacy capability, and their perceptive mechanism can be related to our reflecting capability. However, the studies differ in that they take different lenses; Lenka utilizes service logic (Grönroos, 2011; Grönroos & Voima, 2013), perceiving actor interactions as a dyadic phenomenon. In contrast, this study utilizes SDL (Vargo et al., 2008; Vargo & Lusch, 2016), perceiving actor interactions as a systemic phenomenon. Thus, it can be argued that these studies' findings may be more beneficial for emerging system actor relationships.

In addition, Kamalaldin et al. (2020) identify complementary digitalization capability, and Saunila et al. (2019) find determinants of value co-creation capabilities: customer, market, and service orientation. This study supports these findings, as the underlying elements, particularly in reflecting and aligning capability, have been shown. Therefore, we argue that this study's findings may represent a first step towards developing a more holistic and integrated value co-creation capability framework, bridging a gap of previously disconnected studies.

Lastly, the analysis shows that industrial and service cases contribute equally to conceptualizing value co-creation capabilities. The study only identifies minor differences concerning the concepts underlying the capability sub-themes (see Figure 13). For instance, the capability sub-theme of value thinking highlights that only industrial cases focus on forecasting the implications of their services for their customers. One reason for this difference may be that industrial services can be associated with greater asset specificity and investments (e.g. services connected to the purchase of a machine), while this may be less so in the case of services from pure service providers. Conversely, sub-theme agility entails working with incomplete

information, which is only associated with service cases. This difference may be explained by established attitudes and approaches more commonly associated with service firms (e.g. agile project management or design thinking). This argument may find further support when considering that only industrial cases in the same sub-theme emphasize the ability to free oneself from preconceived notions of how something is supposed to be, which can be understood as a prerequisite to working with incomplete information. Therefore, returning to the level of conceptualized capabilities, we propose that these findings support the notion of disappearing boundaries between product and service (e.g. Coombs & Miles, 2000; Huikkola et al., 2020; Vargo & Lusch, 2016). This suggestion may also indicate that industrial firms are becoming increasingly able to compete with pure service firms. In addition, one may argue that these findings suggest an enhanced chance for value co-creation between these types of firms, potentially leading to more diverse service ecosystems, which would further support the need for the studies' proposed capabilities.

8.6. CONCLUSION

This study started with the understanding that an increasing number of firms focus on digital servitization to gain a competitive advantage. Grounded in SDL, this research assumes that actors engage in relatively open, emerging, and loosely coupled service ecosystems, coming together using service platforms as their venues for resource integration or value co-creation (Lusch & Nambisan, 2015; Vargo et al., 2008). In an attempt to manage these dynamics, actors require value co-creation capabilities (Struyf et al., 2021). However, the literature shows that contributions to *1) what conceptualizes value co-creation capabilities in B2B digital servitization, and 2) how they contribute to new digital service platform development* are limited.

8.6.1. MAIN FINDINGS AND THEORETICAL IMPLICATIONS

From a theoretical perspective, this study contributes to the digital servitization literature by conceptualizing a set of four value co-creation capabilities: digital literacy, reflecting, aligning, and coping. In addition, the study provides structural insights by highlighting underlying sub-themes and content in the context of digital platform service providers. Moreover, from the service provider perspective, the study elaborates on how these capabilities contribute to the value co-creation process in emerging service ecosystems, enabling value co-creation and potentially value co-production. Also, the study adds to the understanding of value co-creation capabilities in digital servitization by discussing implications concerning capability development. Thus, this research answers calls in the literature for an improved understanding of capabilities in digital servitization and their influence on value co-creation (Cimini et al., 2021; Lenka et al., 2017; Parida et al., 2015; Struyf et al., 2021).

8.6.2. MANAGERIAL IMPLICATIONS

The study suggests a set of four value co-creation capabilities: digital literacy, reflecting, aligning, and coping in digital servitization, focusing on digital service platforms and services based on them (e.g. self-service platforms for machinery analytics, maintenance, and improvements). Practitioners may benefit from these findings, as the study explains how these capabilities enable value co-creation and, potentially, value co-production (see Section 8.5). Moreover, this research enables practitioners to understand what characterizes the conceptualized capabilities (see Section 8.4.1 and Figure 13), guiding capability assessment and development.

8.6.3. LIMITATIONS AND FUTURE RESEARCH

This study has several limitations, like any other. The underlying case data stems mainly from single respondents, and multiple interviews per case may have provided more detailed insights into the cases. However, we deliberately decided to build on a more significant case set to gain a more diverse and holistic understanding. Also, the study made effort to triangulate the case data with secondary data sources (e.g. firm documents, press releases, and reports). Moreover, the case data represents relatively mature, established, and leading actors in their respective industries. Case data from more immature and emerging actors may lead to different findings that are valuable for future theorizing. In addition, this study builds mainly on European cases. Considering the low degree of boundedness associated with many digital services, using more diverse cases in terms of origin may be beneficial.

This study based its capability conceptualization purely on data derived from service providers, thus limiting the explanatory power of the study. Future studies should include a more systemic dataset, including insights from actors such as customers and third-party providers. Future studies may also contribute to the literature by taking a longitudinal perspective in investigating potential changes in value co-creation capability emphasis over time and associated factors. Lastly, the study highlights that the nature of digital services contributes to an ever-increasing pace of development. Consequently, future studies should investigate mechanisms that enable actors to adjust their capabilities more frequently.

REFERENCES

Adrodegari, F., Saccani, N., Kowalkowski, C., & Vilo, J. (2017). PSS business model conceptualization and application*. *Production Planning and Control*, *28*(15), 1251–1263. https://doi.org/10.1080/09537287.2017.1363924

Annarelli, A., Battistella, C., Nonino, F., Parida, V., & Pessot, E. (2021). Literature review on digitalization capabilities: Co-citation analysis of antecedents, conceptualization and consequences. *Technological Forecasting and Social Change*, *166*, 120635. https://doi.org/10.1016/j.techfore.2021.120635

Ardolino, M., Rapaccini, M., Saccani, N., Gaiardelli, P., Crespi, G., & Ruggeri, C. (2018). The role of digital technologies for the service transformation of industrial companies. *International Journal of Production Research*, *56*(6), 2116–2132. https://doi.org/10.1080/00207543.2017.1324224

Baines, T., Ziaee Bigdeli, A., Sousa, R., & Schroeder, A. (2020). Framing the servitization transformation process: A model to understand and facilitate the servitization journey. *International Journal of Production Economics*, *221*, 107463. https://doi.org/10.1016/j.ijpe.2019.07.036

Cenamor, J., Rönnberg Sjödin, D., & Parida, V. (2017). Adopting a platform approach in servitization: Leveraging the value of digitalization. *International Journal of Production Economics*, *192*, 54–65. https://doi.org/10.1016/j.ijpe.2016.12.033

Cimini, C., Adrodegari, F., Paschou, T., Rondini, A., & Pezzotta, G. (2021). Digital servitization and competence development: A case-study research. *CIRP Journal of Manufacturing Science and Technology*, *32*(11), 447–460. https://doi.org/10.1016/j.cirpj.2020.12.005

Coombs, R., & Miles, I. (2000). Innovation, measurement and services: the new problematique. In S. Metcalfe & I. Miles (Eds.), *Innovation Systems in the Service Economy* (pp. 85–103). https://doi.org/10.1007/978-1-4615-4425-8_5

Corbin, J., & Strauss, A. (2014). *Basics of qualitative research - Techniques and procedures for developing grounded theory*. SAGE Publications, Inc.

Coreynen, W., Matthyssens, P., & Van Bockhaven, W. (2017). Boosting servitization through digitization: Pathways and dynamic resource configurations for manufacturers. *Industrial Marketing Management*, *60*, 42–53. https://doi.org/10.1016/j.indmarman.2016.04.012

Coreynen, W., Matthyssens, P., Vanderstraeten, J., & van Witteloostuijn, A. (2020). Unravelling the internal and external drivers of digital servitization: A dynamic capabilities and contingency perspective on firm strategy. *Industrial Marketing Management*, *89*, 265–277. https://doi.org/10.1016/j.indmarman.2020.02.014

Cusumano, M. A., Kahl, S. J., & Suarez, F. F. (2015). Services, industry evolution, and the competitive strategies of product firms. *Strategic Management Journal*, *36*(4), 559–575. https://doi.org/10.1002/smj.2235

Cutolo, D., Hardagon, A., & Kenney, M. (2021). Competing on platforms. *MIT Sloan Management Review, 62*(3) 22-30.

den Hertog, P., van der Aa, W., & de Jong, M. W. (2010). Capabilities for managing service innovation: Towards a conceptual framework. *Journal of Service Management*, *21*(4), 490–514. https://doi.org/10.1108/09564231011066123

DPA. (2014, November 11). *Trotz starkem Sommerquartal: Hapag-Lloyd steckt weiter in tiefroten Zahlen*. Handelsblatt. https://www.handelsblatt.com/unternehmen/handel-konsumgueter/trotz-starkem-sommerquartal-hapag-lloyd-steckt-weiter-in-tiefroten-zahlen/10973462.html?ticket=ST-5474218-TX9xXe2xaUJfTSVRs9I3-ap2

DPA. (2018, August 8). *Hapag-Lloyd fährt tiefer in die roten Zahlen*. Handelsblatt. https://www.handelsblatt.com/unternehmen/handel-konsumgueter/reederei-hapag-lloyd-faehrt-tiefer-in-die-roten-zahlen/22901312.html

Echeverri, P., & Skålén, P. (2011). Co-creation and co-destruction: A practice-theory based study of interactive value formation. *Marketing Theory*, *11*(3), 351–373. https://doi.org/10.1177/1470593111408181

Eisenhardt, K. M. (1989). Building theories from case study research. *The Academy of Management Review*, *14*(4), 532. https://doi.org/10.2307/258557

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, *50*(1), 25–32. https://doi.org/10.5465/AMJ.2007.24160888

Eloranta, V., & Turunen, T. (2016). Platforms in service-driven manufacturing: Leveraging complexity by connecting, sharing, and integrating. *Industrial Marketing Management*, *55*, 178–186. https://doi.org/10.1016/j.indmarman.2015.10.003

Gebauer, H., Fleisch, E., & Friedli, T. (2005). Overcoming the service paradox in manufacturing companies. *European Management Journal*, *23*(1), 14–26. https://doi.org/10.1016/j.emj.2004.12.006

Gebauer, H., Fleisch, E., Lamprecht, C., & Wortmann, F. (2020). Growth paths for overcoming the digitalization paradox. *Business Horizons*, *63*(3), 313–323. https://doi.org/10.1016/j.bushor.2020.01.005

Gebauer, H., Paiola, M., Saccani, N., & Rapaccini, M. (2021). Digital servitization: Crossing the perspectives of digitization and servitization. *Industrial Marketing Management*, *93*, 382–388. https://doi.org/10.1016/j.indmarman.2020.05.011

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research. *Organizational Research Methods*, *16*(1), 15–31.

https://doi.org/10.1177/1094428112452151

Glaser, B. G. (1978). *Theoretical sensitivity: advances in the methodology of grounded theory*. The Sociology Press.

Grönroos, C. (2011). Value co-creation in service logic: A critical analysis. *Marketing Theory*, *11*(3), 279–301. https://doi.org/10.1177/1470593111408177

Grönroos, C., & Voima, P. (2013). Critical service logic: Making sense of value creation and co-creation. *Journal of the Academy of Marketing Science*, *41*(2), 133–150. https://doi.org/10.1007/s11747-012-0308-3

Grubic, T. (2018). Remote monitoring technology and servitization: Exploring the relationship. *Computers in Industry*, *100*, 148–158. https://doi.org/10.1016/j.compind.2018.05.002

Hasselblatt, M., Huikkola, T., Kohtamäki, M., & Nickell, D. (2018). Modeling manufacturer's capabilities for the Internet of Things. *Journal of Business and Industrial Marketing*, *33*(6), 822–836. https://doi.org/10.1108/JBIM-11-2015-0225

Huikkola, T., Rabetino, R., Kohtamäki, M., & Gebauer, H. (2020). Firm boundaries in servitization: Interplay and repositioning practices. *Industrial Marketing Management*, *90*, 90–105. https://doi.org/10.1016/j.indmarman.2020.06.014

Kamalaldin, A., Linde, L., Sjödin, D., & Parida, V. (2020). Transforming provider-customer relationships in digital servitization: A relational view on digitalization. *Industrial Marketing Management*, *89*, 306–325. https://doi.org/10.1016/j.indmarman.2020.02.004

Kanninen, T., Penttinen, E., Tinnilä, M., & Kaario, K. (2017). Exploring the dynamic capabilities required for servitization: The case process industry. *Business Process Management Journal*, *23*(2), 226–247. https://doi.org/10.1108/BPMJ-03-2015-0036

Kohtamäki, M., Parida, V., Oghazi, P., Gebauer, H., & Baines, T. (2019). Digital servitization business models in ecosystems: A theory of the firm. *Journal of Business Research*, *104*, 380–392. https://doi.org/10.1016/j.jbusres.2019.06.027

Laud, G., Bove, L., Ranaweera, C., Leo, W. W. C., Sweeney, J., & Smith, S. (2019). Value co-destruction: a typology of resource misintegration manifestations. *Journal of Services Marketing*, *31*(7), 866–889. https://doi.org/10.1108/JSM-01-2019-0022

Lenka, S., Parida, V., & Wincent, J. (2017). Digitalization capabilities as enablers of value co-creation in servitizing firms. *Psychology & Marketing*, *34*(1), 92–100. https://doi.org/10.1002/mar.20975

Lerch, C., & Gotsch, M. (2015). Digitalized product-service systems in manufacturing firms : A case study analysis. *Research Technology*

Management, *58*(5), 45–52. https://doi.org/10.5437/08956308X5805357

Linde, L., Sjödin, D., Parida, V., & Wincent, J. (2021). Dynamic capabilities for ecosystem orchestration A capability-based framework for smart city innovation initiatives. *Technological Forecasting and Social Change*, *166*(120614). https://doi.org/10.1016/j.techfore.2021.120614

Lusch, R. F., & Nambisan, S. (2015). Service innovation: A service-dominant logic perspective. *MIS Quarterly: Management Information Systems*, *39*(1), 155–175. https://doi.org/10.25300/MISQ/2015/39.1.07

Lusch, R. F., & Vargo, S. L. (2018). An overview of service-dominant logic. In *The SAGE Handbook of Service-Dominant Logic* (pp. 3–21). SAGE Publications Ltd. https://doi.org/10.4135/9781526470355.n1

Matthyssens, P., & Vandenbempt, K. (2010). Service addition as business market strategy: Identification of transition trajectories. *Journal of Service Management*, *21*(5), 693–714. https://doi.org/10.1108/09564231011079101

Miles, M. B., Michael Huberman, A., & Saldaña, J. (2019). *Qualitative data analysis. A methods sourcebook* (4th ed.). SAGE Publications, Inc.

Mont, O. K. (2002). Clarifying the concept of product-service system. *Journal of Cleaner Production*, *10*(3), 237–245. https://doi.org/10.1016/S0959-6526(01)00039-7

Mustak, M., & Plé, L. (2020). A critical analysis of service ecosystems research: rethinking its premises to move forward. In *Journal of Services Marketing* (Vol. 34, Issue 3, pp. 399–413). Emerald Group Holdings Ltd. https://doi.org/10.1108/JSM-02-2019-0084

Ostrom, A. L., Parasuraman, A., Bowen, D. E., Patrício, L., & Voss, C. A. (2015). Service research priorities in a rapidly changing context. *Journal of Service Research*, *18*(2), 127–159. https://doi.org/10.1177/1094670515576315

Parida, V., Sjödin, D. R., Lenka, S., & Wincent, J. (2015). Developing global service innovation capabilities :How global manufacturers address the challenges of market heterogeneity. *Research Technology Management*, *58*(5), 35–44. https://doi.org/10.5437/08956308X5805360

Parida, V., Sjödin, D., & Reim, W. (2019). Reviewing literature on digitalization, business model innovation, and sustainable industry: Past achievements and future promises. *Sustainability*, *11*(2), 391. https://doi.org/10.3390/su11020391

Paschou, T., Rapaccini, M., Adrodegari, F., & Saccani, N. (2020). Digital servitization in manufacturing: A systematic literature review and research agenda. *Industrial Marketing Management*, *89*, 278–292. https://doi.org/10.1016/j.indmarman.2020.02.012

Paschou, Theoni, Rapaccini, M., Adrodegari, F., & Saccani, N. (2018). Competences in digital servitization: A new framework. *Proceedings of the*

Summer School Francesco Turco, *2018-Septe*, 381–387.

Porter, M. E., & Heppelmann, J. E. (2014). How smart, connected products are transforming competition. *Harvard Business Review*, *92*(11), 64.

Reim, W., Sjödin, D. R., & Parida, V. (2019). Servitization of global service network actors – A contingency framework for matching challenges and strategies in service transition. *Journal of Business Research*, *104*, 461–471. https://doi.org/10.1016/j.jbusres.2019.01.032

Saunila, M., Ukko, J., & Rantala, T. (2019). Value co-creation through digital service capabilities: the role of human factors. *Information Technology and People*, *32*(3), 627–645. https://doi.org/10.1108/ITP-10-2016-0224

Schlautmann, C. (2020, September 1). *Hapag-Lloyd: Reederei weltweit profitabelster Container-Carrier*. Handelsblatt. https://www.handelsblatt.com/unternehmen/handel-konsumgueter/logistik-hapag-lloyd-ist-profitabelster-container-carrier-der-welt-per-radikal-verordneter-strategie/26219902.html?ticket=ST-10409022-6CjN4EkSiZNGaseujUEA-ap2

Shih, W. (2018). Why high-tech commoditization is accelerating. *MIT Sloan Management Review*, *59*(4), 53–58.

Sjödin, D., Parida, V., Jovanovic, M., & Visnjic, I. (2020). Value creation and value capture alignment in business model innovation: A process view on outcome-based business models. *Journal of Product Innovation Management*, *37*(2), 158–183. https://doi.org/10.1111/jpim.12516

Sjödin, D., Parida, V., & Wincent, J. (2016). Value co-creation process of integrated product-services: Effect of role ambiguities and relational coping strategies. *Industrial Marketing Management*, *56*, 108–119. https://doi.org/10.1016/j.indmarman.2016.03.013

Sklyar, A., Kowalkowski, C., Tronvoll, B., & Sörhammar, D. (2019). Organizing for digital servitization: A service ecosystem perspective. *Journal of Business Research*, *104*, 450–460. https://doi.org/10.1016/j.jbusres.2019.02.012

Story, V. M., Raddats, C., Burton, J., Zolkiewski, J., & Baines, T. (2017). Capabilities for advanced services: A multi-actor perspective. *Industrial Marketing Management*, *60*, 54–68. https://doi.org/10.1016/j.indmarman.2016.04.015

Struyf, B., Galvani, S., Matthyssens, P., & Bocconcelli, R. (2021). Toward a multilevel perspective on digital servitization. *International Journal of Operations and Production Management*, *41*(5), 668–693. https://doi.org/10.1108/IJOPM-08-2020-0538

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, *28*(13), 1319–1350. https://doi.org/10.1002/smj.640

Teece, D. J., Pisano, G., & Shuen, A. (1998). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

Teece, D., & Pisano, G. (1994). The dynamic capabilities of firms: An introduction. *Industrial and Corporate Change*, *3*(3), 537–556. https://doi.org/10.1093/icc/3.3.537-a

Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, *68*(1), 1–17. https://doi.org/10.1509/jmkg.68.1.1.24036

Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: an extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, *44*(1), 5–23. https://doi.org/10.1007/s11747-015-0456-3

Vargo, S. L., Maglio, P. P., & Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European Management Journal*, *26*(3), 145–152. https://doi.org/10.1016/j.emj.2008.04.003

Vollstedt, M., & Rezat, S. (2019). An introduction to grounded theory with a special focus on axial coding and the coding paradigm. In G. Kaiser & N. Presmeg (Eds.), *Compendium for Early Career Researchers in Mathematics Education. ICME-13 Monographs* (pp. 81–100). Springer Cham. https://doi.org/10.1007/978-3-030-15636-7_4

Witell, L., & Löfgren, M. (2013). From service for free to service for fee: Business model innovation in manufacturing firms. *Journal of Service Management*, *24*(5), 520–533. https://doi.org/10.1108/JOSM-04-2013-0103

Yin, R.K. (2018). Case study research and applications. In *Case Study Research and Applications"Design and Methods* (6th ed.). SAGE Publications, Inc.

CHAPTER 9. THE DARK SIDE OF SERVICE ECOSYSTEMS: VALUE CO-DESTRUCTION IN THE VALUE PROCESS OF OPEN BANKING[7]

Struwe, Sascha [a,b]; Slepniov, Dmitrij [a,b]; Marinova, Svetla [a]

[a] *Aalborg University Business School (AAUBS), Denmark*

[b] *Sino-Danish College (SDC), University of Chinese Academy of Sciences (UCAS), China*

Abstract

This paper questions the view that actor engagement in service ecosystems leads to value co-creation (VCC) only. The study explores the value process as comprising VCC and value co-destruction (VCD) in the emerging service ecosystem context of open banking (OB), which has received limited attention to date. The paper employs a multiple-case study design. Three cases from retail banking in the United States, Canada, and the European Union show that the value process entails a contextually embedded dynamic interplay of VCD and VCD, which drives an iterative dialectic value process of service ecosystem change. In this process, VCD has context-specific manifestations associated with institutional regulatory maturity and universal manifestations. The study suggests propositions that contribute to the service-dominant logic and service ecosystem perspectives, provide directions for future research, and offer ideas to practitioners on how to successfully manage the value process in service ecosystems.

Keywords: Open Banking, Service Ecosystems, Value Process, Value Co-creation, Value Co-destruction, Value State

[7] This article has been submitted to the Journal of Service Research

9.1. INTRODUCTION

Rigid organisational boundaries are challenged in various industries, which leads to the emergence of new relationships and organisations and, consequently, the development of complex service ecosystems. This transformation challenges incumbents across all sectors by questioning their ability to create value independently of other actors and to co-create value in traditional inter-organisational formats, such as joint ventures or strategic alliances. Moreover, the transformation affects the ingrained roles of influential actors in service ecosystems (Ng & Wakenshaw, 2018). The financial industry, particularly retail banking, is no exception to this trend, which is challenged by the transformative pressure of open banking (OB).

Fundamentally, OB is about access to customer banking data, its flow, and use. The assumption is that such access may provide improved diversity, choice, and speed of service to customers, while traditional banks and intermediate service providers, hereafter referred to as third-party providers (TPPs), will be able to co-create value for each other.

Traditionally, customer banking data were held and utilised in dyadic bank–customer relationships that are clearly defined in terms of responsibilities and trustworthiness. However, TPPs and regulators have been breaking down the traditionally inscribed limits of this access to customer data and relationships, pushing them to become more open and dynamic. More specifically, TTPs have been seeking access to customer data held by banks proactively and disruptively to develop innovative service offerings, such as account information or payment initiation services, that might improve the value delivered to customers and banks alike. As a result, the new banking paradigm of OB has emerged. According to OB, dyadic bank–customer relationships are transformed into triadic or system-like relationships that have significant implications for the value process.

The dominant narrative of the service eco-system literature is that resource-integrating actors always co-create value and subsequently experience an improvement in utility or well-being (e.g. Vargo et al., 2008; Lusch & Vargo, 2014). For example, establishing an OB ecosystem can help banks improve the overall customer experience by partnering with and leveraging TPPs' capabilities (e.g. data analytics, specialised services, or network effects) (Bracket et al., 2018; The Economist Intelligence Unit, 2020).

However, some studies point out that interactions between service ecosystem actors can also lead to value co-destruction (VCD); hence, there is a reduction in actor well-being and the utility actors gain from the interactions (Echeverri & Skålén, 2011, 2021; Laud et al., 2019; Mustak & Plé, 2020; Plé & Cáceres, 2010). For instance, TPPs may disintermediate incumbent retail banks' back end from their front end serving the customer. This happens through screen scraping, which is the process by

which customer data are retrieved from the bank's database without the bank's consent. In practice, this means that TPPs serve customers by turning the bank into a back-end infrastructure for the TPPs and reducing its ability to co-create value in its dyadic relationship with the customer. Prompted by this and other similar examples, we aim to explore further how value is likely to be co-destroyed in the value process of service ecosystems and what factors (or conditions) may impact VCD and its manifestations in OB. These questions have not been explored in extant research, as OB is an emergent phenomenon that still needs to be better understood by scholars and managers alike.

We address these issues through a multiple-case study design based on three leading incumbent retail banks from the United States, Canada, and the European Union that operate in the emerging OB service ecosystem. The embeddedness of the three banks in different institutional settings allows us to advance our understanding of the value process in emerging OB service ecosystems; explore diverse manifestations of VCD in relation to institutional maturity, value states, and equilibrium; analyse the interplay of value co-creation (VCC) and VCD; and identify formats of resource integration.

The study identifies that various VCD manifestations characterise emerging service ecosystems such as OB. Within these systems context-specific (i.e. institutional maturity) manifestations (e.g. disagreement on how to integrate resources) of VCD were identified. Moreover, the study reveals that service ecosystem actors engage in a dialectic value process characterised by an interplay of VCC and VCD affecting actor value states, which provides further insights into the potential nature of positive value states.

The paper proceeds as follows. The next section presents the theoretical background. Following that, the methodology is explained, including the study's research design and data selection, collection, and analysis. Next, the three cases are presented and analysed, and the findings are discussed. The paper concludes with theoretical and managerial implications, limitations, and future research avenues.

9.2. THEORETICAL BACKGROUND

9.2.1. VALUE CO-DESTRUCTION IN SERVICE ECO-SYSTEMS

VCC in service-dominant logic (SDL) is described as the *"process of increasing the well-being (viability) of an actor through the integration of resources available from the service ecosystems of which it is part"* (Vargo & Lusch, 2016). Value is co-created because no single actor in a system can hold all the resources necessary for its creation. Therefore, actors need to bundle or transact their own resources with those owned by other actors (Hennart, 2009). Thus, an actor can create value by using its own valuable, rare, and difficult-to-imitate resources (Barney, 1991) and, conversely, by accessing, bundling, and integrating complementary, compatible, and congruent

resources (Marinova, 2001) owned by other actors. This access to the bundling and integration of resources is incorporated in the notion of service for service exchange, i.e. *"the process of using one's resources for the benefit of another actor"* (Lusch & Vargo, 2018). Hence, service includes at least two actors who apply and integrate resources for VCC. The configuration of interacting actors and their relationships, encompassing exchange, adaptation, coordination, and resource integration, forms a service system (Chandler et al., 2019). Maglio et al. (2009) define service systems as *"a dynamic value co-creation configuration of resources, including people, organisations, shared information (language, laws, measures, methods), and technology, all connected internally and externally to other service systems by value propositions"*.

Furthermore, Vargo and Lusch (2008) argue that VCC improves the well-being of the actors, which is the *"systems adaptiveness or ability to fit in its environment"* (Vargo & Lusch, 2008). Thus, well-being is related to the service system actors' relations of exchange, adaptation, coordination, and integration of complementary, compatible, and congruent resources, which can create a better fit in the environment. This is even more important in the currently volatile global business environment of global disruption, increased velocity, complexity, and interdependence (Schwab & Malleret, 2020).

The dynamics of environmental change indicate that relational exchanges in service systems may be more unpredictable and unstable, with lower adaptability and stifled resource integration. Therefore, VCC may not be enhanced in such systems, but VCD may be induced as an alternative or parallel process and/or outcome. In line with this argument, some scholars argue that value is not always co-created but can be co-destroyed, which may lead to a reduction of actors' well-being (e.g. Plé and Cáceres, 2010; Echeverri and Skålén, 2011). Plé and Cáceres (2010) define VCD as *"an interactional process between service systems that results in a decline in at least one of the system's well-being"*. In other words, VCD means that when an actor (e.g. service recipient) integrates its own resources with the resources of another actor (e.g. service provider), the well-being of either the service recipient or both the recipient and provider may be reduced.

Moreover, VCD occurs from a discrepancy between a service system actor's (e.g. service provider) expectation of how other actors (e.g. service recipient) should integrate resources and the actual way the other actor integrates these resources (Plé, 2017). Subsequently, Plé (2016) argues that it is possible to relate VCC to appropriate resource integration (aligned expectations) and VCD to misintegration or non-integration (discrepancy), and either constellation may happen accidentally or intentionally in a service system. According to Laud et al. (2019), building on the dynamic equilibrium theory (Headey & Wearing, 1989), actors have individual levels of well-being, or in other words, value states, and VCD may alter these states. However, Suh et al. (1996) argue that any change in well-being or value state remains

temporary and returns to its normal equilibrium after short periods. One way actors may proactively return to equilibrium is by using coping strategies (Folkman & Moskowitz, 2004).

The SDL focuses on service ecosystems as a specific form of service systems, defining them as *"a relatively self-contained, self-adjusting system of resource integrating actors connected by shared institutional arrangements and mutual value creation through service exchange"* (Vargo & Lusch, 2011). The challenge faced by SDL is that it explores the predominantly beneficial outcomes of interactions among service ecosystem actors that pose some questions and lead to calls in the literature for a more substantiated exploration of VCC (Ostrom et al., 2015; Patrício et al., 2018; Plé, 2017). For example, Laud et al. (2019) argue that the current state of the VCC literature is limited. More specifically, it does not point out clearly enough the manifestations of resource misintegration that underlie and induce VCD. Hence, based on a systematic literature review, they propose distinct manifestations of resource misintegration, encompassing a lack of resources, blocked access, an unwillingness to integrate resources, a misunderstanding of how to do this, deceptive behaviour, negligence, an incapacity to integrate resources, and excessive or even coercive integration of resources.

Mustak and Plé (2020) challenge the foundational premises of the SDL that are overly optimistic, ignoring the prospect of various adverse ecosystem outcomes. For example, as opposed to the notion of loosely coupled interactions, research suggests that the existence of tightly coupled interactions leads to rigid and narrow views and insights, ultimately limiting innovation (Jonas et al., 2018). Service ecosystem actors may also have interpretations of institutional arrangements that are different from those of shared institutional arrangements (Kleinaltenkamp, 2018; Plé & Demangeot, 2020). For instance, these interpretations lead to questions about appropriate resource integration practices, which may be particularly relevant when power asymmetries exist (Mele et al., 2018). Additionally, service ecosystems may be exposed to misintegration and non-integration of resources, as some actors may be unable or unwilling to integrate resources (Plé, 2016; Storbacka et al., 2016). Lastly, one can question mutual VCC, as actors may have objectives that are different or potentially conflicting with those of other actors (e.g. when one actor in an ecosystem is trying to improve their own value at the expense of others) (Mele et al., 2018), which in effect will lead to VCD (Echeverri & Skålén, 2011, 2021; Plé & Cáceres, 2010).

Because of this criticism, various scholars call for research exploring the value process in service ecosystems to be more holistic to avoid oversimplification and account for the complex dynamics of the value process. In other words, they may present insights into real service ecosystem configurations and promote a more nuanced development of theoretical knowledge (e.g. Mustak and Plé, 2020; Echeverri and Skålén, 2021). In this study, we adopt a similar approach and explore a service ecosystem configuration in the OB context (see Section 0 for further details).

Considering the above, we start our data analysis from the premise that extant research is unclear about how resource misintegration manifests in emerging service ecosystems, such as OB and VCC research is characterised by an overly optimistic view of relational exchanges, overlooking adverse service ecosystem VCD manifestations.

9.3. METHODOLOGY

9.3.1. RESEARCH APPROACH

We adopt the case study research approach (Yin, 2018) to investigate how value is likely to be co-destroyed in the value process of service ecosystems and what factors (or conditions) may impact VCD and its manifestations in OB. Case studies are instrumental if the study aims to understand a new complex phenomenon in more depth. In addition, we have chosen to include three case studies from three different contexts, which is considered beneficial if the study aims to provide more robust and general evidence of a phenomenon, such as the dynamics of the value process in emergent OB ecosystems (Eisenhardt & Graebner, 2007; Yin, 2018).

9.3.2. DATA SELECTION AND COLLECTION

This study prioritises financial service cases affected by and actively engaging in OB. In particular, we focus on incumbent financial service actors, especially leading retail banks. Based on this purposive sampling, we were able to select three cases. Given the variety of forms that OB (e.g. in view of innovation approaches (micro-level) and regulative frameworks [meso- and macro-levels]) takes across markets, we have selected cases from different regions, including North America and Europe, to capture more nuanced insights on the value creation process (see Table 19).

The primary data came from 11 semi-structured interviews. Six of these interviews were conducted with senior and executive-level managers involved in managing and orchestrating OB value processes in the respective banks (cases). These interviews were used to inform our analysis and discussion of the value process. The remaining five interviews were conducted with senior and executive-level managers of actors in the OB ecosystem, such as TPPs and non-governmental organisations. The latter was used to enhance our understanding of the OB phenomenon and to provide further data for the empirical section (see Section 9.4).

All interviews were guided by an interview grid informed by the theory (see Section 9.2). Among other things, the questions explored matters such as the main actors, their roles, and the nature of their value process–related interactions. The interviews were conducted via video chat and audio-recorded for transcription purposes. Lastly, this study utilised secondary data sources, such as reports and company documents.

Table 19. Data Overview

Ref. Code		Data	Key Respondent	Role
Cases	Alpha	2x Semi-structured Interviews 3x Secondary Documents	Open Banking Business Development Manager	Bank
	Beta	2x Semi-structured Interviews 2x Secondary Documents	Senior Advisor Open Banking	Bank
	Gamma	2x Semi-structured Interviews 1x Webinar Recording 8x Secondary Documents	Open Banking Community Manager, Vice President Strategic Partner	Bank
Others	Delta	2x Semi-structured Interviews	Head of Strategy, Innovation and Open Banking Communications Manager	OB Eco-System
	Zeta	2x Semi-structured Interviews	Vice President, Clients & Partnerships	OB Eco-System
	Eta	1x Semi-structured Interviews	Head of Research	OB Eco-System

9.3.3. DATA ANALYSIS

The data analysis was conducted through rigorous within and cross-case analysis (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Yin, 2018). Thus the study first analysed the individual cases as separate entities to achieve an in-depth understanding and data immersion through structured coding using Nvivo. These insights enabled the identification of features and themes unique to the case, facilitating the development of preliminary theory. Following this step, the analysis progressed to cross-case analysis to validate general features and themes that may occur across cases (Miles et al., 2014; Mills et al., 2013). The researchers also engaged in comparing identified patterns against existing theory (Yin, 2018). Moreover, the study conducted process tracing to understand further the interactive elements of involved case actors and their relationships to other service ecosystem actors (George & Bennett, 2005). The following section provides rich insights into the contextual nature of the cases. The analysis section presents insights into the characteristics of the value process of each case, and the following discussion derives reflections on the cross-case considerations.

9.4. EMPIRICAL CONTEXT

OB is an emergent banking practice that enables unaffiliated actors, such as TPPs, to access and utilise customer banking data to offer advanced customer services. Typical OB service examples are account information and payment initiation services (The Economist Intelligence Unit, 2020). The emergence of this practice is strongly connected to the regulative push of the European Union (EU) to introduce the Payment Service Directive (PSD1) in 2007 and the second Payment Service Directive (PSD2) in 2015 (European Commission, 2007, 2015). These directives are commonly considered the kickstarter of OB development globally and have generally associated

OB with application programming interfaces (API). These APIs are built based on specific technical standards and allow the secure exchange of customer banking data through access tokens controlled by the customer between unaffiliated actors, such as banks and TPPs (The Economist Intelligence Unit, 2020). In fact, in the EU, banks must offer account- and payment-related APIs free of charge (European Commission, 2015).

Nevertheless, not all markets have regulative frameworks that demand access to free APIs. Thus, given the lack of or access to such APIs, a workaround called screen scraping (SS) has emerged. Typically, SS refers to a computer program that can retrieve information that appears on a digital display for further use outside the context of that display. For example, a researcher may apply SS to retrieve textual information from an organisation's press releases to conduct an analysis of them. In the OB context, SS refers to unaffiliated actors receiving access to customer login credentials using robots (automated scripts) that take advantage of these credentials to log into the customer bank accounts while pretending to be the customer. Once access to the affiliated customer account has been gained, data is retrieved for further service use.

Generally, OB is associated with various value co-creation benefits. For example, it can boost competition and innovation (e.g. create new service and revenue models) or improve customer experience, financial transparency, and security. However, OB may not be equally beneficial for all actors involved in the service ecosystem, leading to value co-destruction.

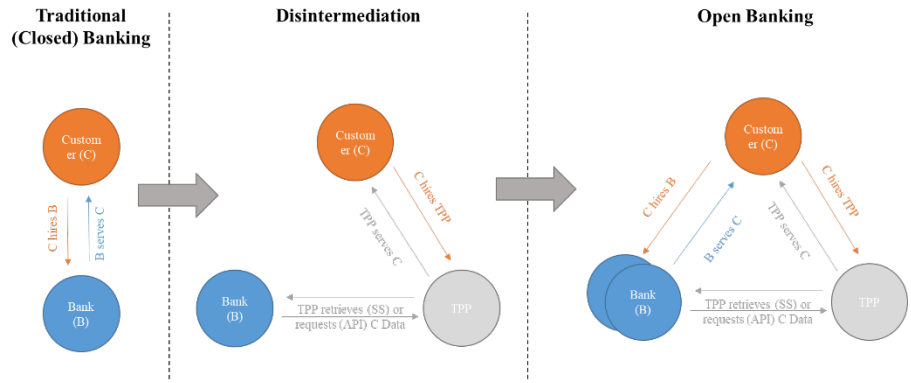


Figure 16. The Transformation of Value Process Dynamics in OB

Figure 16 shows how OB can alter the traditional bank–customer relationship. In a closed banking system, the bank directly controls the entire value chain and interactions with customers. In contrast, in the OB system, TPPs can gain access to customer data, enabling them to provide advanced OB services to customers. In doing

so, TPPs disintermediate the bank and the customer. On the one hand, it can be argued that this disintermediation increases competition and draws attention to customer-centricity, which can be considered an overall benefit. However, it may also hold various co-destructive risks for the actors involved. Suppose the TPPs gain access to customer data by screen scraping the bank databases. In practice, this act represents a violation of bank property rights. This can also expose customers to data breaches if SS or data handling is carried out insufficiently. In many contexts, e.g. in the US and the EU, it is unclear who is responsible for any potential leaks and affiliated financial losses. The banks will likely need to cover the costs, either because they are legally liable or because they want to maintain the relationship with their customer. However, the most value destructive force is that banks will be reduced to utilities or infrastructure for TPPs, consequently diminishing their ability to co-create value. For instance, it may limit the bank's service offerings to low-margin services, such as saving and checking accounts.

Such a scenario does not need to occur if banks embrace OB. For example, a report by the Boston Consulting Group suggests three alternative OB strategies. First, banks can re-enforce the core by augmenting existing banking offerings by integrating TPP functionality. An example of this strategy is a collaboration between the Dutch bank ABN AMBRO and the Swedish TPP Tink, which allowed ABN AMBRO to add new personal finance management solutions to its portfolio. Second, banks can create new distribution channels by becoming the preferred partners of TPPs. There are certain functions or services that TPPs either cannot or do not want to offer, for instance, due to capital or regulative requirements. For instance, take Ant Finance, which has become one of the largest distributors of bank investment funds in Asia. They do not set up these funds themselves but partner with institutions that do. Lastly, banks can launch innovative ventures to create new businesses through the help of TPPs that can be operated outside the core. For example, the Dutch bank ING launched Payconiq, a highly popular API-based mobile payment and payment processing platform (Bracket et al., 2018).

As the above shows, OB is a contemporary phenomenon that will significantly influence the future of financial services in general and retail banking in particular. Because of the intensity of the emerging change, the context of OB is prone to various frictions between service ecosystem actors. Therefore, we believe that OB represents a fruitful context for studying the insufficiently understood interplay between VCC and VCD (Echeverri & Skålén, 2021; Laud et al., 2019; Mustak & Plé, 2020; Plé, 2017).

9.5. ANALYSIS

The follow-up analysis provides insights into the findings from the case data. Two aspects were influential in developing the sections of the analysis. First, we present emerging themes from the case data, such as perceptions of and reactions to OB,

current and future business models, and challenges in the case description. Second, informed by the theory, we identified manifestations of VCD in OB.

9.5.1. CASE DESCRIPTION

The following describes the cases investigated in this study that represent banks that predominantly focus on retail banking, which are considered leading actors in their respective markets. OB is an imminent development for all of them.

9.5.1.1 Alpha

Alpha is a US-based multinational bank with more than US$500 billion in assets under management. It primarily focuses on retail services, such as checking and savings accounts, loans, and credit cards. Among these, credit card services stand out as a significant contributor to the bank's overall revenue and profit.

Alpha is characterised as an organisation driven by profit maximisation for its shareholders. Generally, OB is perceived as a threat to its current business model, creating a sense of reluctance, yet Alpha acknowledges a growing customer demand and increasingly fierce competition.

"Banks don't like OB, in general, because OB empowers the ecosystem outside the bank, and not inside the bank." (#1 Intv. Alpha)

Consequently, efforts to transform its business model to accommodate OB are limited:

"OB is not the highest priority for the bank. We haven't progressed much." (#1 Intv. Alpha)

The main reason for this inertia is that the *"profit model is driving the business model. The profit margins tell us all the plans."* In reference to its credit card business, Alpha expresses that it is *"addicted to models of marketing that have existed for the past three decades".* The bank also struggles to understand how it can benefit from OB, mainly because it finds it challenging to build a viable business case around it. Nonetheless, Alpha believes it should take a *"more active role"* and *"be the bank that customers want"*. At the same time, Alpha emphasises that it is critical to avoid becoming the *"big dumb pipe",* a metaphor representing an unequal situation where only TPPs benefit from OB and Alpha becomes only an infrastructure for data storage and security (#1,2 Intv. Alpha). Hence, Alpha is currently considering a future business model characterised by maintaining the traditional retail relationship with the customer and establishing new ventures (see Figure 17). These new businesses can operate independently of the bank's core business, enabling them to pursue opportunities that would not be possible within the core organisation (e.g. as they may

be too disruptive). In addition, these new businesses may build on the support of TPPs, as this can accelerate the intended development (Bracket et al., 2018).

Alpha's business environment is characterised by a lack of OB-directed regulation, leaving current actors with a free market regime. However, in July 2021, President Biden's administration underwrote the executive order "Promoting Competition in the American Economy" (The White House, 2021), effectively creating an initial regulative framework for OB (McNamee, 2021).

9.5.1.2 Beta

Beta is a Canadian-based bank with more than US$250 billion in assets under management. It has a diversified revenue mechanism portfolio with savings, agricultural loans, residential mortgages, and consumer credit, with commercial and industrial lending being the most significant.

Beta is driven by creating value (i.e. improving financial well-being) for its various customer groups through high service utility. It considers OB generally as an opportunity that can empower the customer and offer new opportunities for VCC in partnership with TPPs; *"it's really a win-win solution"* (#1 Intv. Beta). However, even though Beta perceives OB as an overall beneficial development, it is also concerned about establishing reciprocity between service ecosystem actors. *"We need to be very serious about that"; "it is totally an opportunity".* (#1 Intv. Beta)

Similar to Alpha, Beta has not yet established a working OB business model. Much of Beta's development remains at the level of strategic consideration, as opposed to concrete actions. Beta wants to ensure that they do not become a *"manufacturer of data"*, which is a metaphor closely related to Alpha's *"big dumb pipe"*. Instead, Beta expresses that they want to be a central actor that is a *"useful"* and *"trusted advisor"*. Beta intends to achieve a win–win profit model, meaning that not only would the bank benefit but it should also *"enrich our customers' lives"* in such a way that they do not *"have any financial problems"* and can have a *"good life and save money".* (#2 Intv. Beta)

Beta believes that these goals could best be achieved through strong partnerships with TPPs that can strengthen their core business (see Figure 17). More specifically, Beta considers white-labelling specialised OB services from TPPs and promoting them to their customers as developed by themselves as an attractive approach. This means that Beta may be able to offer OB services in a cheaper and faster fashion than developing services and the necessary capabilities themselves (Bracket et al., 2018). In addition, Beta hopes to benefit from OB, just as TPPs do. That is, once the necessary API infrastructure is established in Canada, Beta wants to gain permission from its customers to access customer financial data from other institutions to gain more insights and be able to offer more holistic services. For example, suppose Beta had a

better overview of its customers' financial situations across their accounts. In that case, it could make more accurate risk assessments, which would allow it to offer lower rates for loans.

Similar to the US context, Canada's institutional environment has no regulative OB framework yet. However, work on OB regulation has already started in 2018, and various legal proposals have been made (Financial Consumer Agency of Canada, 2021). The legislator's current aim is to implement rules for consumer protection and liabilities, an accreditation framework for TPPs, and technical specifications for safe and efficient data exchange by 2023 (Department of Finance Canada, 2021).

9.5.1.3 Gamma

Gamma is a bank based in the Nordics (EU), with more than US$250 billion in assets under management. Gamma primarily focuses its retail activities on lending, deposits, and payments, with each equally contributing to overall revenue.

Gamma's overall ambition is to become the leading actor in the OB context to secure future relevance and viability. They understand OB as a disruptive force that demands fundamental organisational changes.

"If we want to survive, we need to adjust; we need to be where our customers are and offer the services that our customers need, even if it's maybe not so much like banking, but maybe it's like more technology services." (#1 Intv. Gamma)

What makes Gamma's case unique is that given the regulative framework of the EU (for more, please see below), Gamma has already been forced to provide APIs free of charge for access to customer accounts and payment information to TPPs since 2018. Gamma has established a *"front runner"* mindset and has gone beyond compliance:

"I would say it's already business as usual for us." (#1 Webinar Gamma)

Gamma has established a platform eco-system-based business model consisting of five business pillars to pursue these ambitions. First, like Alpha and Beta, it continues its traditional relationships with retail customers. However, given the platform approach, Gamma can leverage a more significant resource pool, e.g. utilising services from organisations present on its platform. Second, Alpha significantly extends its offerings to large corporate customers with so-called premium APIs. For example, an international corporate customer may want to validate bank accounts before paying a supplier's invoice. Traditionally, this would require sending documents to various institutions involved in the process, as databases are not connected. However, Gamma offers an API that can be integrated into the customer's system, fully automating the process, as the API connects directly to all necessary databases.

"We are behind the curtains; we are helping to ensure that services are up and running (…); it is e banking in the front-end, the bank is in the back-end" (#1 Intv. Gamma).

Similar offerings also exist for consumer-facing customers. This development has various implications. For instance, Gamma establishes itself as a *"change agent"* (#1 Intv. Gamma), a role typically taken by software or technology system houses, as they help their customers become OB ready. It also opens a new opportunity to gain access to customers, as being embedded in corporate customer systems creates access to the customer's customers.

Gamma leverages the opportunity to create new distribution channels by establishing strategic partnerships with TPPs. Suppose that a TPP has established a significant customer base with its service offering, e.g. account aggregation, and now wants to offer services that it has not provided previously. In this case, the TPP may find a partner in Gamma, as it could provide critical banking infrastructure or services, as banks are traditionally strong at risk management (Bracket et al., 2018). Fourth, Gamma may also hire TPPs to strengthen its existing service offering or allow it to offer services previously not offered. Lastly, as Gamma takes an open platform approach, it provides a development environment for TPPs similar to the developer platforms known from tech brands like Apple and Google. Ultimately, taking this approach offers a win–win situation for the actors involved, as it leverages network effects. Developers find access to development tools, sandboxes, and a large customer base. Conversely, Gamma benefits from the growing number of services based on its platform standards, providing further business opportunities, as described in the third and fourth pillars, or new opportunities that go beyond OB developing towards open finance or embedded finance.

With regard to regulation, the EU context must be considered a leading region in the establishment of OB. The first concrete developments date back to Payment Services Directive 1 (PSD1) (European Commission, 2007). From 2018, PSD2 made the free provision of account information and payment initiation APIs mandatory for incumbent banks (European Commission, 2015), and the new enhanced PSD3 is in progress.

In conclusion, the three cases are embedded in institutional environments based on free market rules and in a single industry. However, their national (and, in the case of Gamma, supranational) institutional regulatory environment is at a different stage of development and enforcement. Moreover, the three banks have somewhat diverse perspectives on the utility and hence VCC potential of OB for the three groups of parties involved in their service ecosystem, i.e. the bank, the TPPs, and the customers. Alpha and Beta question the utility of the banks themselves unless they have either control over the TPP services by integrating them into the overall bank offer or a final say in the complementary services TPPs provide as an extension of or external add-

ons to the bank's core services. By comparison, Gamma has been re-designing its business model towards a digital platform provision where TPPs and other actors can access customer data and develop their direct relationships with bank customers, which in effect has been re-configuring the bank–customer interface.

9.5.2. VALUE CO-DESTRUCTION IN OB

The following describes VCD in OB service ecosystems in the form of resource misintegration manifestations (Laud et al., 2019) from the perspective of retail banks.

9.5.2.1 Lack of resources to integrate

When it comes to serving customers globally (e.g. multinational corporates), service providers face the issue of lacking standards and solutions that would enable them to do so, which points to voids in the institutional system or at least to differences in the institutional readiness to embrace OB. Currently, solutions are often made for particular markets based on local standards. However, working with multiple localised solutions is an inefficient and unattractive prospect for customers operating in various countries. Moreover, such customers cannot leverage resources across markets, and if they attempt to do so, they cannot integrate resources.

"If I am telling them that is OK, we have here a beautiful service, which is solving all your problems for Europe, they will be staring at me and saying are you kidding me?" (#2 Intv. Gamma).

9.5.2.2 Unwillingness to integrate resources

Notably, the North American cases in this study are characterised by the banks' unwillingness to integrate resources, i.e. to co-create value with TPPs by allowing the latter to access customer data openly and free of charge. They perceive OB as breaking the traditional boundaries of the confidential bank–customer relationship. Consequently, they see TPPs as an external provider enhancing the overall bank service to the customer or as an external partner being an add-on to the existing service provision. Therefore, banks deliberately withhold the key resource TPPs want to access (i.e. customer data). This behaviour relates mainly to the issue of reciprocity or *"parity"* and a lack of perceived value of the interaction for the bank. Such a position preserves the viability of a bank as a bank that not only holds monetary wealth but also embodies the trust of the customer in financial services vis-à-vis the bank as an open digital service platform:

"There is a risk of the banks having no profit centres anymore." (#2 Intv. Alpha)

As we touched upon in the case description (see section 9.5.1), banks want to prevent getting disintermediated from the customer, making them a *"big dumb pipe"* (#1, 2 Intv. Alpha) or a *"manufacturer of data"*. (#1 Intv. Beta)

"If we just become the technology behind it and no longer engage with customers, we do not know our customers anymore. That is the problem. No one wants that." (#1 Intv. Alpha) *"...providing the data without taking advantage of the data"*. (#1 Intv. Beta)

In addition, building on the notion of reciprocity, banks' unwillingness to integrate resources is further enhanced by insufficient regulation concerning accountability for liabilities, for example, if financial losses occur in the interaction between the TPP and the customer. In such a situation, the current regulative state in the US requires banks to refund customers even if the situation has limited or no influence on the result.

"The regulators can only control the banks; they do not control the Fintechs. They say that if something happens to data, it is your fault." (#1 Intv. Alpha)

Moreover, current regulation is perceived as too complicated (e.g. a multitude of regulative governance bodies without unified standards), creating ambiguity and further reducing the banks' willingness to co-create value with TPPs.

"The regulator landscape is so freaking complex. (...) It is a nightmare." (#1 Intv. Alpha)

9.5.2.3 Misunderstanding of how to integrate resources

Similar to the North American context, some regulative issues exist in the EU. However, market conditions differ. Banks in the EU are not given a choice as to whether they would like to participate in OB, but it is mandatory under PSD2. Thus, instead of being unwilling to integrate resources, Gamma's situation is characterised by misunderstandings related to resource integration. This challenge concerns a lack of information concerning the type of resources and the consequent responsibilities and liabilities associated with how resources can be integrated. If a TPP uses customer bank details fraudulently or perhaps gets access to customer data but then files for bankruptcy, it remains unclear what it means for the customer, the trust between the bank and the customer, and the resources used by the bank in developing the relationship with the TPP. It is also unclear *"who is in charge"* of the potential customer-associated data issues. Gamma assumes that ultimately, it will be the banks that need to deal with problems that arise. However, the bank's reaction may be associated with the degree of interest and control over shared resources and co-created value. In this case, the value will be destroyed for the three parties in the service ecosystem.

"It is the responsibility of the bank; they will give the money back. And then that would start a discussion between the bank and a third-party provider." (#2 Intv. Gamma)

9.5.2.4 Disagreement on how to integrate resources

OB ecosystem actors experience disagreements on how to realise OB. For example, the current EU regulative framework PSD2 does not prescribe best practice procedures (e.g. in terms of identity authentication or data security), leaving it to the service ecosystem actors to find a consensus, which is considered bothersome, particularly in *"non-differentiating areas"* (#7 Sec. Data Gamma). In addition, there are disagreements about API standards.

"There is not like one way of building these APIs (…), so there are integration challenges."

So far, consensus building *"has not been a huge success".* (#1 Intv. Gamma)

The North American context is also characterised by various disagreements, particularly concerning differences in how revenues and costs should be shared among service ecosystem actors:

"The relationship between Alpha and Fintechs is a huge struggle."

"We want them to pay for our services because they are not free. They do not want to pay for them." (#1 Intv. Alpha)

Since TPPs rely on access to customer data to offer services, they have no choice but to make an agreement with a bank or to rely on a workaround that provides them with customer data. This workaround is screen scraping (see section 0), which causes a clear conflict with the banks on data privacy. For example, banks disapprove screen scraping and its practices. TPPs ask their customers to share their account login credentials with the TPP, which then use automated scripts, pretending to be the respective customer who is retrieving financial data from associated accounts. According to Alpha, this approach poses significant risks and legal issues. For example, customers may experience data breaches, fraud, or financial losses:

"The screen scrapers might not be very good", and it may result in *"low quality, inaccurate, incomplete, wrong, misleading data, maybe screen scraping another person's account".* (#1 Intv. Alpha)

"It is very expensive, very labour-intensive, very backward. It is just not a good solution." (#2 Intv. Alpha)

Screen scraping can adversely affect the bank–customer relationship because the moment the customers share their login credentials with the TPPs, the terms of agreement with the bank are broken. Banks are also concerned about IP rights infringement in the screen scraping process because TPPs may reverse engineer bank technology to gain improved access to customer data.

Banks disagree with some of the TPPs' business practices. For example, suppose banks intervene in the screen scraping process and prevent access to customer accounts and data. In that case, some TPPs react with hostile marketing practices, publicly shaming banks from denying customers access to their data. This news may upset customers and cause them to form a negative image of the bank:

"Consumers will get really pissed off." (#2 Intv. Alpha)

In addition, Alpha highlights that TPPs tend to hold customers in suspense about the associated risks of screen scraping:

"Consumers do not understand the risks that they are putting themselves into." (#2 Intv. Alpha)

Gamma points out that simple OB services, such as account or payment aggregation services promoted by PSD2, do not present a viable business case to banks:

"So basically, that part is not a business for a bank. (…) *I have not seen many business cases where banks would really be breaking value out of the PSD2.*

"… simply that function of banks opening up those APIs… that does not really bring immediate value." (#2 Intv. Gamma)

Because of this limitation, some banks perceive OB more as a compliance exercise that may have some VCC effects but more so may lead to VCD.

9.5.2.5 Deceptive integration of resources

Resource misintegration also manifests itself in the form of the deceptive integration of resources. Alpha and Beta point out that it is their impression that TPPs are aware of the unclear regulations concerning liabilities, as described above. Because of this, screen scraping is considered an opportunistic act. They do not care whether this would cause unwanted (value destroying) outcomes for the banks:

"They do not want because they look at the banks as inefficient, slow-moving beasts." (#2 Intv. Alpha)

At the same time, *"Banks are not willing in any way to bear the liabilities for misuse of the data."* (#1 Intv. Beta)

9.5.2.6 Negligent integration of resources

Gamma points out that establishing OB within the organisation, getting everyone on board, and ensuring necessary action is complex. It requires significant efforts. The organisation should be continuously reminded why embracing OB and high involvement are critical for future success:

"It is a new mindset (...) we had to justify why we made it."

Gamma highlights that sometimes *"it is easier to talk with externals, certain parties like Fintechs rather than internal stakeholders."*

It comes down to making value tangible to customers and internal stakeholders to buy into OB:

"A lot of efforts to prove that OB is a good deal." To achieve this, it is necessary to showcase *"concrete value."* (#1 Intv. Gamma)

9.5.2.7 Incapacity to integrate resources

Furthermore, all three banks face some incapacities in integrating resources. For example, Alpha and Beta are inexperienced in OB and struggle to understand how they can co-create value in this new context:

"I do not think banks in the long run (...) can provide services, that would always be better (than TPP services). I do not see that as possible." (#1 Intv. Alpha)

Overcoming the existing organisational mindset is particularly challenging for banks:

"I have seen how inefficient banking is at Alpha." (#1 Intv. Alpha)

A primary concern relates to being able and willing to identify and establish a new business that is as profitable as or even more profitable than existing services:

"*No one is gonna say let us do it differently. And this is a problem."* (#1 Intv. Alpha).

Nevertheless, it is clear that future services must be more customer-centric (e.g. personalised and convenient):

"If you do not do this, the customer will move away." (#1 Intv. Alpha)

"(...) you need to go to a new state." (#1 Intv. Beta)

Similarly, Beta highlights the following:

"It is so challenging, but it is a competitive challenge; we will have to innovate."

"If we do not move fast, the bank will be in big trouble (...)." (#1 Intv. Beta)

Building further on competitive aspects, Beta perceives an imbalance in the resources and capabilities of the bank and its competitors. In particular, GAFA—an acronym standing for the big tech corporations Google, Amazon, Facebook, and Apple—are considered a threat.

"They will be able to deploy better solutions because the bank is very slow to deploy a solution. And they do not have money to waste to deploy solutions." (#1 Intv. Beta)

In particular, the pace of development concerns Beta:

"We are using a lot of old technology, and we need to modernise our infrastructure to be able to make this data available." (#2 Intv. Beta)

In addition, there is concern about information asymmetries. GAFA own significant customer data that banks cannot access, and the combination of these two data stocks may create a solid competitive edge.

Gamma finds that many of its corporate customers face readiness gaps. Although they desire to integrate OB solutions, issues, such as legacy infrastructure, culture, mindset, and capabilities, often prevent implementation. (#2 Intv. Gamma)

9.5.2.8 Excessive integration of resources

The cases show manifestations of excessive resource integration by TPPs. When TPPs screen scrape bank databases, they may retrieve more data than needed for their services or get data accessible to associated customer accounts that do not legally belong to the customer. For example, Alpha describes partnerships with Bloomberg and Thomson Reuters to provide selected customers with more profound financial insights. Screen scraping these data creates a legal issue for the bank, as this act infringes on the bank's agreements with the service providers.

"You are not allowed contractually to provide all of these pricing data to aggregators." (#2 Intv. Alpha)

9.5.2.9 Coercive integration of resources

Another resource misintegration manifests itself in the form of coercive integration. Alpha's case shows that when banks decide to go against the screen scraping applied by TPPs, the latter may react with negative or hostile marketing against the respective banks. What characterises this dilemma is that banks argue that they want to protect customers when intervening in cases of screen scraping. However, customers turn against banks out of misinformation about the risks involved when they do so.

"We cannot say no. We hate it because there are a lot of risks involved." (#1 Intv. Alpha)

Ultimately, this poses a lack of control and agency for the bank to fulfil its role as a protector of customer data and funds.

The analysis above exemplifies how resource misintegration manifests in OB. Table 2 summarises the findings (see Table 2).

Table 20. Value Co-destruction as Resource Misintegration Manifestations in OB

	Resource Misintegration	**Example Causes**	**Representative Quotes**	**Representative Cases**
Group 1	Unwillingness to integrate resources	Concerns of limited reciprocity; fears of being disintermediated; lack of perceived value to co-create with TPPs	*"Big dumb pipe"; "manufacturer of data"; "providing the data without taking advantage of the data."*	Alpha; Beta
	Deceptive integration of resources	Opportunistic integration of resources	*"They do not want because they look at the banks as inefficient, slow-moving beasts."*	Alpha; Beta
	Excessive integration of resources	Screen scraping more data than needed; infringing service agreements	*"You are not allowed contractually to provide all of these pricing data to aggregators."*	Alpha
	Coercive integration of resources	Lack of control and agency limiting core functions	*"We cannot say no. We hate it because there is a lot of risks involved."*	Alpha
Group 2	Lack of resources to integrate	Unavailability of global OB solutions	*"(...) solving all your problems for Europe. They will be staring at me and saying are you kidding me?"*	Gamma
	Misunderstanding of how to integrate resources	Lack of information about the regulative framework (e.g. responsibilities and liabilities)	*"Who is in charge"; "(...) start a discussion between the bank and a third-party provider."*	Gamma

	Negligent integration of resources	Limited interest and participation from internal stakeholders	*"It is easier to talk with externals, certain parties like Fintech's rather than internal stakeholders."*	Gamma
Shared	Disagreement on how to integrate resources	Conflict over best practice (e.g. authentication or data security) and cost and revenue sharing; disapproval of screen scraping	*"There is not like one way of building these API's (...)."; "The relationship between Alpha and Fintech's is a huge struggle."*	Alpha; Beta; Gamma
	Incapacity to integrate resources	Inexperience in co-creation; reluctant organisational mindset; limited future vision; lack of confidence about own capabilities	*"I have seen how inefficient banking is (...)"; "No one's gonna say let us do it differently. And this is a problem."*	Alpha; Beta; Gamma

9.6. DISCUSSION

Based on the above data analysis, we will now revisit the starting premise for the analysis and discuss our findings.

9.6.1. INSTITUTIONAL MATURITY, UNIVERSAL, AND SPECIFIC MANIFESTATIONS OF VCD

The analysis shows that VCD manifestations have affected all cases, albeit in different ways and to different extents. Two manifestations have affected the three banks, but seen more precisely, the cases in our study can be separated into two groups with distinct manifestations: on one side, Alpha and Beta, and on the other, Gamma (see Table 20). We explain the difference in the groups with two maturity factors. As described in the case description (see section 9.5.1), Alpha and Beta are in the embryonic stage of OB development compared with Gamma, which has already adopted OB. Moreover, Alpha and Beta's regulative frameworks are nascent, while Gamma's framework demands adopting OB and makes it obligatory for EU banks. A closer look at the individual VCD manifestations associated with the two groups seems to support our argument of institutional framework maturity and explains the differences in VCD manifestations. Take Alpha and Beta; both are leading banks in their respective markets, enjoying stability, control, and power. Any change to this status represents a threat. Hence, it may be met with VCD manifestations, such as unwillingness to or perception of coercive integration of resources. Common reasons for such behaviour include politics, mistrust, lock-in, sunk costs, path dependencies, hierarchy, or traditional bank culture.

VCD manifestations associated with Gamma seem to align with an organisation that is further along in the process of OB. Manifestations like a lack of resources (e.g. global API standards) or misunderstandings of how to integrate resources (e.g. open

question of liabilities) indicate challenges faced in enacting OB by an organisation that operates in an enforced regional institutional framework. As for the shared VCD manifestations, we can argue that disagreement on how to integrate resources and the incapacity to do so may well be universal, affecting cases independently of the degree of institutional maturity. Consequently, we propose the following:

Proposition 1a: OB service ecosystem actors may experience specific VCD manifestations, depending on the maturity of the institutional framework.

Proposition 1b: OB service ecosystem actors may experience universal VCD manifestations of disagreements on resource integration and/or actor incapacity to do so, notwithstanding the maturity of the institutional framework.

The analysis also points to VCC manifestations that have positively affected retail bank cases (see Table 21). The most prominent one is that OB ecosystems provide banks with enhanced resource integration opportunities because APIs enable banks to connect previously disconnected services. If APIs utilise common standards, modular integration based on context-dependent needs is possible. Such service innovations have been much more complicated in traditional and siloed banking systems because services were made to fit the needs of a bank or specific customer groups and were not intended to be integrated with the broader service ecosystem. For instance, a modern OB service may integrate insurance, investment, and payment service APIs to offer one holistic service in one interface. Other VCC opportunities are predominantly mentioned as perceptions of a possible opportunity that are conditioned on the maturity of institutional development and coherence of OB regulations or on the unanimously expressed requirement that Alpha and Beta remain in control of their customer data and customer trust values.

Table 21. Examples of Value Co-Creation Manifestations in OB

Resource integration	**Example Causes**	**Representative Quotes**	**Representative Cases**
Performance gains and cost reductions	Process automation and API interconnectivity	*It's cost a lot of money,(...) we can accelerate innovation."*	Alpha; Beta; Gamma
Innovative push; Digital agility	TPPs push banks out of their comfort zone	*"Fintechs also help banks improve because banks have no incentive to do well."*	Alpha
Improved predictability	Customers can grant permission for data aggregation across various financial services; reduced information asymmetry; greater access to data; deeper insights	*"Like a carrot, and maybe you run faster."*	Beta
Improved convenience and experience	APIs enable instant feedback on customer requests (e.g. credit request and approval)	*"API's is something which offers customer speed, real-time, no need to read long manuals"*	Alpha; Beta; Gamma
Better service conditions	Sharing data with service providers enables service providers to make more accurate evaluations, reducing prices and interest rates	*"We make a lot of money, but we can also make good money if we enrich our customers and add to them."*	Beta

Hence, we propose the following:

Proposition 1c: An enacted institutional regulative framework forces banks to adopt OB and creates openness and opportunities for resource integration in service ecosystems.

Proposition 1d: A nascent institutional regulative framework enables banks to associate well-being with their direct or indirect control over resource integration rather than with their ability to adapt resource integration.

9.6.2. VALUE STATE AND EQUILIBRIUM

Furthermore, as presented in the analysis, VCD manifestations affect OB service ecosystem actors. Arguably, this influences actor value states, creating disequilibrium (Laud et al., 2019), or in other words, a situation in which resource misintegration is so present that affected actors experience significantly reduced well-being. However, the literature points out that these states of disequilibrium tend to be temporary, and actors return to a state of equilibrium in relatively short periods (Headey & Wearing, 1989; Suh et al., 1996). Moreover, a typical approach to re-establishing balance is through coping strategies (Folkman & Moskowitz, 2004).

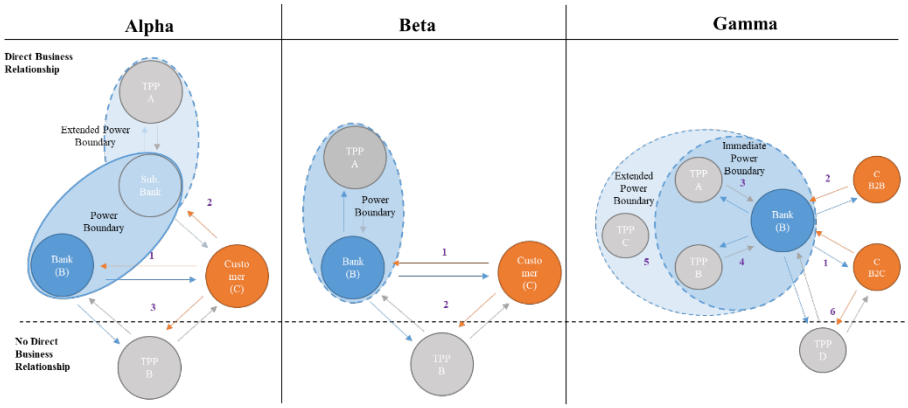


Figure 17. Cases of New Business Models and Organisational Power Boundaries

Indeed, it seems that actors actively engage in coping to return to a state of well-being, as represented through the future OB business models of our cases (see section 9.5.1). All cases aim to establish (Alpha & Beta) or have established (Gamma) a new business model, which extends their organisational boundaries to include TPPs in different formats (e.g. internalising, partnering, or serving). Arguably, this enables the banks to extend their influence and power so that manifestations of resource misintegration are less likely (see Figure 17).

However, TPPs utilising screen scraping continue to co-exist with focal banks in the same service ecosystem. Among other things, this may be the case due to a lack of regulation, the enforcement of free and public OB APIs, or a limited regulation that does not include attractive business areas (e.g. PSD2 covers payment and accounting but not other services). Regardless of the reason, this shows that coping strategies, such as a change in the business model, may not always lead to an equilibrium. This suggests that an equilibrium is an ideal state and that in reality, actors will more likely experience a disequilibrium. However, this disequilibrium in itself does not say much about the true value state as long as it does not factor in time. In addition, these states of disequilibrium may be characterised by a surplus of either VCC or VCD, further emphasising the dimension of time as an essential element in evaluating an overall positive value state (see Figure 18). Hence, we propose the following:

Proposition 2a: Service ecosystem actors' value states may never experience an equilibrium of VCC and VCD, which represents an ideal state.

Proposition 2b: Service ecosystem actors will more likely experience value states in disequilibrium, characterised by a surplus of VCC or VCD, emphasising the element of time to evaluate overall well-being.

Value State:	Amount of experienced VCC over time	vs	Amount of experienced VCD over time
Value Equilibrium:	Amount of experienced VCC over time	=	Amount of experienced VCD over time
Positive Value State:	Amount of experienced VCC over time	≥	Amount of experienced VCD over time

Figure 18: Overview of Value State and Equilibrium

9.6.3. CO-EXISTENCE OF VCC AND VCD AND THEIR INTERPLAY

The data analysis demonstrates how resource misintegration manifests in the emerging complex service ecosystem of OB, exemplifying how VCD manifestations may co-exist with VCC. This co-existence may take different forms. It may appear as a sequential chain of events or as parallelly occurring events of resource misintegration or integration for the focal banks. For example, one may argue that before the advent of OB, banks were in a positive value state characterised by a surplus of VCC. They then experienced resource misintegrations (e.g. screen scraping leading to disagreement on how to integrate resources), shifting the state into a negative one. Finally, focal actors attempted to re-establish a positive value state by developing new business models (coping). At the same time, it can be argued that VCC and VCD are parallel processes because despite the coping, screen scraping actors, who are resource misintegrators causing VCD, continue to exist in the same service ecosystem. These insights suggest that VCC and VCD can be understood as manifold and multidimensional, and that their effect on actor value states may depend on the actor's organisational power boundaries.

We also recognise that not all banks (Alpha and Beta) support an optimistic view of OB, but one of them (Gamma) does. From this, we derive that actor experience or perceptions of VCD manifestations may influence value states. Arguably, each actor has a specific value state (i.e. VCC vs VCD). Suppose this state is changed, then it is likely to cause tension and friction, particularly for the focal actor, because the existing status quo is challenged. The analysis shows that given this status, actors engage in dialogue—some form of a balancing process that creates a new status quo that satisfies the actors' needs and expectations. Thus, a dialectic change process emerges, and a new status quo remains until it is rechallenged and a new dialectic process begins (Nardelli, 2017; van de Ven & Poole, 1995), which suggests iterative and consecutive features.

Proposition 3a: VCC and VCD are interrelated and may co-exist and occur in different forms (e.g. in sequence or in parallel).

Proposition 3b: VCC manifestations in an OB ecosystem are the other side of VCD manifestations but not necessarily a mirror image of the latter.

Proposition 3c: It is not the fact that VCC and VCD co-exist that determines well-being but the degree to which either condition is experienced or perceived by a particular actor.

Proposition 3d: The interplay of VCC and VCD is the driver of an iterative dialectic service ecosystem change process.

9.6.4. NATURE OF SERVICE ECOSYSTEMS—LOOSELY COUPLED SYSTEMS AND SELF-ADJUSTING ACTORS

Elevating the discussion to the systems level, we now discuss some of the fundamental premises of SDL. SDL understands service ecosystems as loosely coupled and self-adjusting systems of connected actors (Lusch & Vargo, 2014). By comparison, Laud et al. (2019) suggest that this understanding overlooks the potential of tightly coupled service ecosystems. Based on the studies' analyses, we postulate that tightly coupled systems not only exist but may also exist simultaneously in one service ecosystem, depending on which actor and which relationship is analysed.

Gamma's future business model (see section 9.5.1) provides an example for this claim. It exhibits both tight (immediate power boundary) and loose (extended power boundary) coupling (see Figure 17). For example, suppose Gamma embeds its services into its customer services (e.g. by providing an API that enables the customer to provide instant payment to its customer). In that case, this could be considered tight coupling, as the bank and the TPP make contractual agreements and hence form a formal relationship. At the same time, Gamma also provides a platform that allows the same customer to freely integrate other resources as they like, such that actors are loosely coupled and only have an informal relationship. Thus, we propose the following:

Proposition 4a: Service ecosystems may be characterised by loose and tight coupling, which may co-occur depending on which actor and relationship are analysed and the purpose of their resource integration.

Further considering the SDL premise of loosely coupled systems and self-adjusting actors, Gamma's future business model (see Section 9.5.1) provides insights that challenge the notion of loose coupling being beneficial for VCC and its actual existence in digital service ecosystems such as OB.

Take Gamma's extended power boundary (see Figure 17), representing its broader OB platform, which does not require actors to establish contractual relationships with Gamma. For example, TPPs can benefit from the resources (e.g. free OB community, code documentation, or developer tools) available on the platform. A similar example is the Apple Developer environment for the Apple App Store. What is problematic about this seemingly loosely coupled system is that it is questionable whether these actors truly have a choice. Successful service ecosystems or platforms tend to create strong network effects that draw actors towards them. The stronger these effects, the fewer alternatives actors have other than interacting with them ("winner takes it all") (Cutolo et al., 2021). In addition, once an actor is part of the platform and its respective service ecosystem, a significant risk of undermining asset specificity and increasing the lock-in exists, which can lead to high switching costs (e.g. see Epic Games leaving the Apple App Store). Thus, these developments may create various dependencies and power imbalances that can limit TPP's agency (Danneels, 2003; Mele et al., 2018; Orton & Weick, 1990; Weick, 1976) and its ability to self-adjust. Instead, they may face power plays (Mele et al., 2018) that can limit their ability to create unique value propositions (e.g. platform owner may dictate design attributes) or their strategic manoeuvrability (e.g. platform owner may favour some actors over others) (Cutolo et al., 2021).

Changing the perspective, one could also ask what consequences loose coupling has for the focal actor, e.g. if an actor (e.g. customer) utilises Gamma's platform that can integrate resources freely and decides to use these resources to compete with Gamma. In a tightly coupled system, this would not be possible, as contractual agreements are likely to prevent it (e.g. governance mechanisms). Therefore, loosely coupled ecosystem actors may not necessarily experience VCC or agency; hence, VCC and the agency of actors in a loosely coupled system may be an illusive concept. Based on this, we propose the following:

Proposition 4b: One service ecosystem may be experienced differently by various actors, depending on their agency, power, and position in the system.

Proposition 4c: Loose coupling may expose actors to more significant risks of VCD than tight coupling.

Proposition 4d: Neither loosely nor tightly coupled service ecosystems are guaranteed to create value. Instead, the outcome depends on appropriate resource integration practices or mechanisms.

Proposition 4e: Digital service ecosystems, such as OB, challenge the distinct notion of a loosely and tightly coupled ecosystem. Depending on the dominance of individual actors and their resourcefulness, tight coupling may be the norm.

9.6.5. FORMATS OF RESOURCE INTEGRATION INTERACTIONS AMONG SERVICE ECO-SYSTEM ACTORS

Another premise of the SDL is that service ecosystem actors engage in resource integration interactions (Lusch & Vargo, 2014). However, this assumption is criticised, as it may ignore the potential of misintegration and non-integration of resources (Mustak & Plé, 2020; Plé, 2016). Indeed, the analysis confirms the existence of misintegration and non-integration in OB. In particular, non-integration stands out, as it represents the opposite of the SDL premise.

The nature of the transactions between the banks and TPPs in the ecosystem indicates that some banks with market or resource ownership advantages perceive their control over customer data as their key resource and as paramount for sustaining their business model and bargaining power vis-à-vis other players in the same industry. Such banks do not see the need to change their business model from a traditional bank to a financial services platform offering free access to customer data for TPPs. This brings our discussion to the bundling theory suggested by Hennart (2014), who from the premises of transaction cost economics, argues that in any transaction, organisations aim to maximise their gains by adopting the most appropriate mode of market servicing based on the ease of resource transactability and ownership. Such modes range from preserving the organisation's full control over its own resources (whole ownership), or the internalisation of innovative resources held by others, to partnerships with shared resource control (equity or non-equity), and to purchasing products that are easy to transact offered by diverse suppliers in the open market. Hence, we suggest the following:

Proposition 5a: Banks can share their key resources (customer data) with TPPs in partnerships, some of which imply equity ownership (tight coupling) or without equity ownership (loose coupling).

Proposition 5b: Banks will not share key resources (customer data) with TPPs but rather buy their services if these are readily available and thus easy to transact in the open market, i.e. loose coupling.

The key points are presented in Figure 3 below to conclude the above discussion.

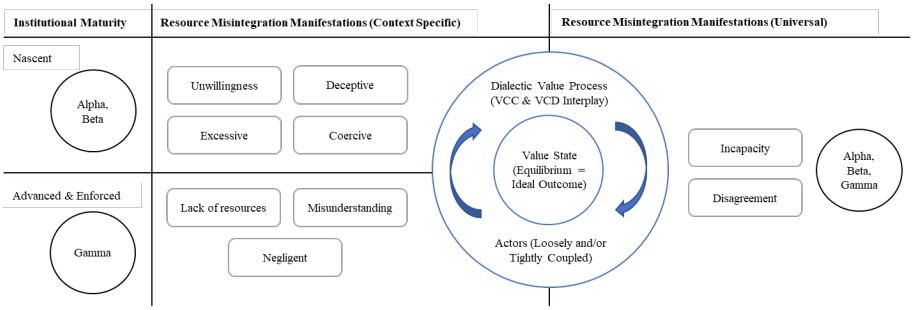


Figure 19: Dialectic Value Process Framework

9.7. CONCLUSION

With a multiple-case study of three leading international retail banks across Europe and North America, this article explores how value is likely to be co-destroyed in the value process of service ecosystems and what factors (or conditions) may impact VCD and its manifestations in OB. In doing so, the study responds to the calls by various scholars to advance our understanding of VCC and VCD, as well as the underlying premises of service ecosystems in which these interactions take place (e.g. Plé and Cáceres, 2010; Echeverri and Skålén, 2011, 2021; Laud et al., 2019; Mustak and Plé, 2020). Based on these efforts, various propositions have been brought forward, summarised in Figure 19 and further elaborated below.

Notably, the study reveals that VCD manifestations in OB can be separated into context-specific and universal manifestations. Context-specific manifestations, such as an unwillingness to integrate resources or a lack of resources to integrate, are further dependent on the maturity of the institutional regulative framework of the service ecosystem that actors are part of. For example, the North American cases in this study are situated within a nascent or early-stage institutional regulative framework. These circumstances imply that the actors involved must determine resource integration practices and mechanisms on their own, resulting in various resource misintegration manifestations (e.g. unwillingness to integrate resources or deceptive resource integration). In contrast, independent of context (i.e. the maturity institutional regulative framework), two universal resource misintegration manifestations were identified (i.e. incapacity to and disagreement on how to integrate resources), implying that all actors of emerging service ecosystems such as OB need to deal with their potential adverse effects.

Furthermore, the study uncovers that service ecosystem actors engage in a dialectic value process driven by an interplay of VCC and VCD. For instance, screen scraping may be experienced as VCC for the executing actor (e.g. TPP) and its connected beneficiaries (e.g. customers). However, it may also be experienced as VCD by another actor (e.g. bank). Hence, VCC and VCD are no mirror images, and VCC for

one actor may be VCD for another. Moreover, it shows that all service ecosystem actors are interconnected, and their resource integration interactions influence another's value states. Actors thrive towards a value state in equilibrium, an ideal state that balances VCC and VCD. In reality, actors will likely be more in a state of disequilibrium, which may be tipping either way towards VCC or VCD. Therefore, the element of time becomes critical. That is, actors probably want to remain in a surplus state (i.e. VCC) for most of the time to experience overall well-being. Since service ecosystem actors are interconnected, actors must engage in a dialectic process, which can be understood as the synthesis of potentially opposing views of VCC. From the perspective of service ecosystems, achieving beneficial dialectic outcomes is particularly complicated due to the scope of interactions in such systems, requiring appropriate practices and mechanisms that work at scale. Additionally, the outcome of this dialectic process may be subject to the type of service ecosystem coupling. For example, an actor may experience loose and/or tight coupling, creating different constellations of agency, power, and position in the system, ultimately affecting its ability to tip the balance towards VCC.

9.7.1. MANAGERIAL IMPLICATIONS

The findings also have implications for practice. In general, firms must develop a clear understanding of what characterises resource misintegration manifestations in their particular contexts. This study points towards the level of maturity of the institutional regulative framework as a critical contextual factor, suggesting that different resource misintegration manifestations can be associated with different maturity levels. In addition, the study highlights universal resource misintegration manifestation (i.e. the incapacity to and disagreement about how to integrate resources). That means that firms must establish the following: 1) a sensitivity towards these manifestations such that identification becomes natural; 2) a corporate mindset that acknowledges these manifestations as an inherent part of the value process instead of perceiving them as sources of tension and conflict; and 3) appropriate practices and coping mechanisms to address manifestations proactively.

Furthermore, service ecosystems such as OB show that organisational boundaries do not necessarily define the scope of interactions, as the example of screen scraping shows. Therefore, traditional features that have defined competitiveness (e.g. valuable, rare, limited, or non-substitutable resources) may not be enough to remain competitive. Instead, the study shows that the value process is characterised by an interplay of VCC and VCD, requiring dialectic practices and mechanisms to achieve beneficial value outcomes. In practice, this means firms must understand themselves as systemic entities that are part of an interconnected service ecosystem, and each resource integration activity has value implications for other actors within the system. To gain future competitive advantage, firms should consider the following: 1) knowing who the other relevant service ecosystem actors are, not necessarily being within the same service line or even industry; 2) identifying respective resource

integration motives; and 3) proactively engaging in a dialectic value process (i.e. the synthesis of potentially opposing views of VCC). To achieve these activities at scale, firms may want to consider establishing: 1) network effects that draw actors towards them; 2) sufficient infrastructure, such as interfaces (e.g. communities) that encourage engagement; and 3) boundary objects that support mutual understanding.

9.7.2. LIMITATIONS AND FUTURE RESEARCH

This study focused on retail banks as its focal actors. Hence, its insights into the value process are limited to this perspective. Thus, to gain a more holistic understanding of the value process, we encourage future studies to incorporate more inclusive data, including actors such as customers and TPPs. Doing so could enable cross-analysis, potentially providing insights into the root causes of resource misintegration that are valuable for theoretical development and practice.

Moreover, we suggest longitudinal studies considering that the value process is characterised by a dialectic interplay between VCC and VCD. Positive value states or ideal equilibriums are probably best understood over time, as the synthesis of different potentially diverging views of VCC likely holds valuable insights into coping mechanisms on various service ecosystem levels (micro, meso, and macro). For instance, on a micro-level, Struwe and Slepniov (2021) show in a related longitudinal study that understanding actor institutions and utilising context-dependent actualisation mechanisms, or in other words, boundary objects, are critical to achieving positive resource value assessment that leads to appropriate resource integration.

Considering the underlying premises of SDL and service ecosystems, this study also contributed to the discussion on the completeness of its foundational premises (Lusch & Vargo, 2014; Mustak & Plé, 2020). As discussed, the study shows that not all service ecosystem actors are loosely coupled, and not all actors engage in resource integration. In addition, the analysis also indicated, but did not discuss, that service ecosystem actors might not share the same institutional arrangements as assumed by the SDL. Hence, we invite future studies to investigate diverging interpretations or applications of institutional arrangements (e.g. Kleinaltenkamp, 2018; Mustak & Plé, 2020; Plé & Demangeot, 2020; Sajtos et al., 2018) in the context of OB and other service ecosystems to develop the underlying premises of SDL further.

REFERENCES

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Bracket, T., Dab, S., Kok, S. A., & Peeters, M. (2018). *Retail Banks Must Embrace Open Banking or Be Sidelined*. https://www.bcg.com/publications/2018/retail-banks-must-embrace-open-banking-sidelined

Chandler, J. D., Danatzis, I., Wernicke, C., Akaka, M. A., & Reynolds, D. (2019). How does innovation emerge in a service ecosystem? *Journal of Service Research*, *22*(1), 75–89. https://doi.org/10.1177/1094670518797479

Cutolo, D., Hargadon, A., & Kenney, M. (2021). Competing on platforms. *MIT Sloan Management Review*, *62*(3), 22–30.

Danneels, E. (2003). Tight-loose coupling with customers: the enactment of customer orientation. *Strategic Management Journal*, *24*(6), 559–576. https://doi.org/10.1002/smj.319

Department of Finance Canada. (2021). *Final Report - Advisory Committee on Open Banking*. https://www.canada.ca/en/department-finance/programs/consultations/2021/final-report-advisory-committee-open-banking.html

Echeverri, P., & Skålén, P. (2011). Co-creation and co-destruction: A practice-theory based study of interactive value formation. *Marketing Theory*, *11*(3), 351–373. https://doi.org/10.1177/1470593111408181

Echeverri, P., & Skålén, P. (2021). Value co-destruction: Review and conceptualization of interactive value formation. *Marketing Theory*, *21*(2), 227–249. https://doi.org/10.1177/1470593120983390

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, *50*(1), 25–32. https://doi.org/10.5465/AMJ.2007.24160888

European Commission. (2007). *Payment services (PSD 1) - Directive 2007/64/EC*. European Union. https://ec.europa.eu/info/law/payment-services-psd-1-directive-2007-64-ec_en

European Commission. (2015). *Payment services (PSD 2) - Directive (EU) 2015/2366*. https://ec.europa.eu/info/law/payment-services-psd-2-directive-eu-2015-2366_en

Financial Consumer Agency of Canada. (2021). *Open banking*. https://www.canada.ca/en/financial-consumer-agency/services/banking/open-banking.html

Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. *Annual Review of Psychology*, *55*, 745–774. https://doi.org/10.1146/annurev.psych.55.090902.141456

Headey, B., & Wearing, A. (1989). Personality, life events, and subjective well-being: Toward a dynamic equilibrium Model. *Journal of Personality and Social Psychology*, *57*(4), 731–739. https://doi.org/10.1037/0022-3514.57.4.731

Hennart, J. F. (2009). Down with MNE-centric theories! market entry and expansion as the bundling of MNE and local assets. *Journal of International Business Studies*, *40*(9), 1432–1454. https://doi.org/10.1057/jibs.2009.42

Jonas, J. M., Sörhammar, D., & Röndell, J. (2018). Extending innovation – From business model innovation to innovation in service ecosystems. In *The SAGE Handbook of Service-Dominant Logic* (pp. 655–671). SAGE Publications Ltd. https://doi.org/10.4135/9781526470355.n37

Kleinaltenkamp, M. (2018). Institutions and institutionalization. In *The SAGE Handbook of Service-Dominant Logic* (pp. 265–281). SAGE Publications Ltd. https://doi.org/10.4135/9781526470355.n16

Laud, G., Bove, L., Ranaweera, C., Leo, W. W. C., Sweeney, J., & Smith, S. (2019). Value co-destruction: a typology of resource misintegration manifestations. *Journal of Services Marketing*, *31*(7), 866–889. https://doi.org/10.1108/JSM-01-2019-0022

Lusch, R. F., & Vargo, S. L. (2014). *Service dominant logic premises perspectives possibilities.* In R. F. Lusch & S. L. Vargo (eds.). Cambridge University Press.

Lusch, R. F., & Vargo, S. L. (2018). An overview of service-dominant logic. In *The SAGE Handbook of Service-Dominant Logic* (pp. 3–21). SAGE Publications Ltd. https://doi.org/10.4135/9781526470355.n1

Maglio, P. P., Vargo, S. L., Caswell, N., & Spohrer, J. (2009). The service system is the basic abstraction of service science. *Information Systems and E-Business Management*, *7*(4 SPEC. ISS.), 395–406. https://doi.org/10.1007/s10257-008-0105-1

Marinova, S. (2001). *Relationships between the Legally Entitled Parties in the FDI Privatisation Process in Bulgaria* [Samfundslitteratur]. https://research.cbs.dk/en/publications/relationships-between-the-legally-entitled-parties-in-the-fdi-pri

McNamee, P. (2021). Why biden's executive order is a green light for US open banking. *Finextra*. https://www.finextra.com/the-long-read/234/why-bidens-executive-order-is-a-green-light-for-us-open-banking

Mele, C., Nenonen, S., Pels, J., Storbacka, K., Nariswari, A., & Kaartemo, V. (2018). Shaping service ecosystems: exploring the dark side of agency. *Journal of Service Management*, *29*(4), 521–545. https://doi.org/10.1108/JOSM-02-2017-0026

Mustak, M., & Plé, L. (2020). A critical analysis of service ecosystems research: rethinking its premises to move forward. In *Journal of Services Marketing* (Vol. 34, Issue 3, pp. 399–413). Emerald Group Holdings Ltd.

https://doi.org/10.1108/JSM-02-2019-0084

Nardelli, G. (2017). Innovation dialectics: an extended process perspective on innovation in services. *The Service Industries Journal*, *37*(1), 31–56. https://doi.org/10.1080/02642069.2017.1289513

Ng, I., & Wakenshaw, S. (2018). Service ecosystems: A timely worldview for a connected, digital and data-driven economy. In *The SAGE Handbook of Service-Dominant Logic* (pp. 199–213). SAGE Publications Ltd. https://doi.org/10.4135/9781526470355.n12

Orton, J. D., & Weick, K. E. (1990). Loosely Coupled Systems: A Reconceptualization. *The Academy of Management Review*, *15*(2), 203. https://doi.org/10.2307/258154

Ostrom, A. L., Parasuraman, A., Bowen, D. E., Patrício, L., & Voss, C. A. (2015). Service research priorities in a rapidly changing context. *Journal of Service Research*, *18*(2), 127–159. https://doi.org/10.1177/1094670515576315

Patrício, L., Gustafsson, A., & Fisk, R. (2018). Upframing service design and innovation for research impact. *Journal of Service Research*, *21*(1), 3–16. https://doi.org/10.1177/1094670517746780

Plé, L. (2016). Studying customers' resource integration by service employees in interactional value co-creation. *Journal of Services Marketing*, *30*(2), 152–164. https://doi.org/10.1108/JSM-02-2015-0065

Plé, L. (2017). Why do we need research on value co-destruction? *Journal of Creating Value*, *3*(2), 162–169. https://doi.org/10.1177/2394964317726451

Plé, L., & Cáceres, R. C. (2010). Not always co-creation: Introducing interactional co-destruction of value in service-dominant logic. *Journal of Services Marketing*, *24*(6), 430–437. https://doi.org/10.1108/08876041011072546

Plé, L., & Demangeot, C. (2020). Social contagion of online and offline deviant behaviors and its value outcomes: The case of tourism ecosystems. *Journal of Business Research*, *117*, 886–896. https://doi.org/10.1016/j.jbusres.2019.06.002

Sajtos, L., Kleinaltenkamp, M., & Harrison, J. (2018). Boundary objects for institutional work across service ecosystems. *Journal of Service Management*, *29*(4), 615–640. https://doi.org/10.1108/JOSM-01-2017-0011

Schwab, K., & Malleret, T. (2020). *COVID-19: The Great Reset*. World Economic Forum.

Storbacka, K., Brodie, R. J., Böhmann, T., Maglio, P. P., & Nenonen, S. (2016). Actor engagement as a microfoundation for value co-creation. *Journal of Business Research*, *69*(8), 3008–3017. https://doi.org/10.1016/j.jbusres.2016.02.034

Struwe, S., & Slepniov, D. (2021). Conflict by design and why institutions matter in service design: A case of a German creative agency in China. *Journal of*

Business Research, *130*, 124–136. https://doi.org/10.1016/j.jbusres.2021.03.035

Suh, E., Diener, E., & Fujita, F. (1996). Events and subjective well-being: Only recent events matter. *Journal of Personality and Social Psychology*, *70*(5), 1091–1102. https://doi.org/10.1037//0022-3514.70.5.1091

The Economist Intelligence Unit. (2020). *Open banking: revolution or evolution?* The Economist. https://www.openbankingeurope.eu/media/2044/economist-open-banking-report.pdf

The White House. (2021). *Executive Order on Promoting Competition in the American Economy*. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/

van de Ven, A. H., & Poole, M. S. (1995). Explaining development and change in organizations. *The Academy of Management Review*, *20*(3), 510. https://doi.org/10.2307/258786

Vargo, S. L., & Lusch, R. F. (2008). Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science*, *36*(1), 1–10. https://doi.org/10.1007/s11747-007-0069-6

Vargo, S. L., & Lusch, R. F. (2011). It's all B2B...and beyond: Toward a systems perspective of the market. *Industrial Marketing Management*, *40*(2), 181–187. https://doi.org/10.1016/j.indmarman.2010.06.026

Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: an extension and update of service-dominant logic. *Journal of the Academy of Marketing Science*, *44*(1), 5–23. https://doi.org/10.1007/s11747-015-0456-3

Vargo, S. L., Maglio, P. P., & Akaka, M. A. (2008). On value and value co-creation: A service systems and service logic perspective. *European Management Journal*, *26*(3), 145–152. https://doi.org/10.1016/j.emj.2008.04.003

Weick, K. E. (1976). Educational organizations as loosely coupled systems. *Administrative Science Quarterly*, *21*(1), 1. https://doi.org/10.2307/2391875

Yin, R. K. (2018). *Case study research and applications: Design and methods*. SAGE Publications, Inc.

CHAPTER 10. CONCLUSION

10.1. KEY FINDINGS AND THEORETICAL CONTRIBUTIONS

This thesis shows that despite increasing interest from diverse scholars, the B2B service innovation literature remains nascent. The stream suffers from fragmentation and incohesive contributions. For instance, many studies do not define service innovation, use constructs (e.g. service innovation, new service development, or service design) interchangeably, and clearly position their perspectives (e.g. assimilation, demarcation, or synthesis). As a result, the current state-of-the-art B2B service innovation literature is limited in terms of explainability (Article 1).

This chapter concludes the thesis through a higher-level abstraction of its findings. In doing so, the thesis attempts to generalize and answer its main research question, providing a proposition (P)-based theory of how value creation in B2B service innovation unfolds and addressing the limitation in the literature.

What do we know about actors and the characteristics of value creation in B2B service innovation?

- Proposition 1: Value creation results from the interplay of value co-creation (VCC) and value co-destruction (VCD) (Article 4).
- Proposition 2: Actors have value states influenced by their subjective experiences of VCC and VCD (Article 4).
- Proposition 3: Actors' experience of VCC and VCD is affected by their institutions' resource value assessment (Articles 2 & 4).
- Proposition 4: Understanding actor institutions' resource value assessment is critical for successful VCC and avoiding VCD (Articles 2 & 4)
- Proposition 5: Actors' institutions depend on contextual conditions (Articles 2 & 4).

How can actors influence value creation in B2B service innovation (mechanisms)?

- Proposition 6: Actors should adjust their service interface and infrastructure to facilitate VCC (Article 2).

- Proposition 7: Actors should engage in a dialectic process to enable VCC (Article 4).

What do actors need to influence value creation in B2B service innovation (capabilities)?

- Proposition 8: Actors need reflecting, aligning, and coping capabilities to facilitate adjusting service interfaces and infrastructure and/or to engage within a dialectic process (Article 3).

Value creation in B2B service innovation is not a straightforward undertaking and is characterized by multiple complexities concerning actors and the value creation process. Figure 20 helps to understand this complexity by emphasizing that value creation does not happen within a vacuum but through the interaction of multiple actors. Note that Figure 20 positions the business customer as the central actor because, according to service-dominant logic (SDL), the beneficiary (e.g. service providers' customer) determines value in use or context (Lusch & Vargo, 2014; Vargo & Lusch, 2004).

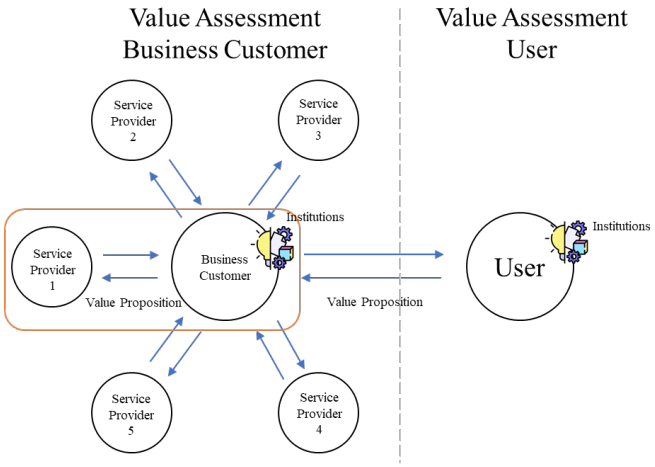


Figure 20: Complex and Systemic Nature of Value Creation and Value Assessment

The thesis finds that value creation results from the interplay of VCC and VCD (P1) (see Figure 21). Unlike the established notion within the SDL literature (Echeverri & Skålén, 2021; Plé, 2017) that resource-integrating actors experience VCC only, the

[8]This figure has been designed using resources from Flaticon.com; Freepik

thesis finds empirical evidence that actors who engage in value creation experience manifestations of VCC and VCD (Articles 2 & 4).

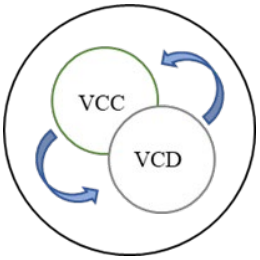


Figure 21: Value Creation as an Interplay between VCC and VCD

Furthermore, the thesis introduces the concept of value states to capture value creation and the interplay of VCC and VCD more accurately. A value state refers to the sum or cumulation of experienced VCC and VCD (P2). SDL argues that no one actor can create value without integrating resources from multiple actors (Vargo & Lusch, 2004, 2011). Although not clearly addressed within SDL, this implies that time is an essential condition for value creation. Realistically, the whole resource exchange and integration process cannot occur within a single instance. Therefore, the thesis suggests that value creation must be viewed from start to end, going beyond individual relationship dyads and applying a systemic and holistic view similar to what design thinking calls the Gestalt view (Micheli et al., 2019). Imagine a traditional scale that leans left or right depending on the more significant load. Value state determination follows this metaphor; each resource integration within the value creation process may be experienced as VCC or VCD by the beneficiary, tipping the scale of the value state in either direction. What matters is where the scale leans at the end of the process, determining whether the value was truly created.

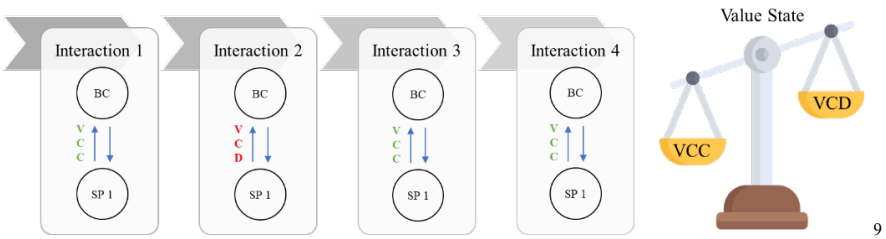


Figure 22: Value State as the Result of the Interplay Between VCC and VCD Over Time

[9] This figure has been designed using resources from Flaticon.com; Freepik

Moreover, the thesis finds that the experience of either VCC or VCD is influenced by actor institutions (e.g. norms or values) that affect the assessment of the value (e.g. utility) of resources (e.g. knowledge or skills) proposed during the value creation process (P3). Take two firms from different industries. One firm comes from the creative industry (e.g. marketing and advertising) and another from an industrial background (e.g. machinery and equipment). The creative firm will likely have an SDL, meaning that it believes it cannot create value but can only offer value propositions, which may lead to value as determined by the beneficiary in use and context through a co-creational process. The industrial firm may have a goods-dominant logic (GDL), meaning that they assess value (e.g. the price of a good), which is simply exchanged (e.g. money against good); hence, value is embedded in the good and created by the firm (Vargo & Lusch, 2008). Bringing these actors together will create a situation in which different institutional logics affect the value creation process. Aligned institutions will likely lead to positive outcomes, whereas unaligned institutions can lead to tensions and conflict, potentially resulting in a negative resource value assessment and VCD. Therefore, it is critical to understand the actor institutions involved in setting the stage for VCC (P4).

However, gaining insights into actor institutions is not limited to the immediate boundaries of the relationship dyad. It is critical to acquire a deep understanding of the actors' business, including its customers and related service providers, as these actors shape the focal actor institutions and potentially the other way around. Therefore, the actor institutions of resource value assessment are not independent of context (P5). For instance, the maturity of a given regulative framework, culture, or technology are examples of contextual factors influencing actor institutions and value assessment.

The thesis also provides findings on how actors can influence the value creation process in B2B service innovation through mechanisms. One such mechanism is the adjustment of service interfaces and infrastructure to align with value assessment institutions and facilitate VCC (P6). Interfaces are the tangible resources associated with the direct exchange and interaction between two or more actors. In contrast, the infrastructure is below the line of visibility, the intangible, and the service operations that facilitate the service activities (Secomandi & Snelders, 2011), yet both interface and infrastructure are interrelated and must be aligned. What is particularly critical is the approach of actualizing the interface, as this is the touchpoint through which an actor (e.g. customer) experiences that whole service.

Imagine a typical restaurant configured to serve many guests or families on separate tables hosting a big family event (e.g. confirmation or birthday). Such a family probably emphasizes values such as cohesiveness, community, and exchange. Changing the restaurant's setting to accommodate a big group, potentially connecting several tables to a large one, aligns and actualizes the service interface with the family's institutions. Setting up the kitchen in a way that it can prepare a large number

of meals at the same time so the family can eat together adjusts the service infrastructure. Failing to understand and act accordingly can lead to VCD (P4).

Another mechanism is to engage within a dialectic process to enable VCC (P7). Suppose actors wish or need to collaborate despite their differences (e.g. institutions). In that case, they can engage in a dialectic (i.e. discourse) process of balancing expectations and interests to establish the frame for a working relationship. This suggests that actors should accept that it is inherently natural to have differences. Thus, differences may not be perceived as causes of tension and conflict but as an opportunity for learning and improving the conditions of exchange. In doing so, actors establish value-creating friction or constructive dialogue that changes the current status quo for resource exchange and integration, creating a new paradigm.

Both mechanisms proposed above emphasize that value creation in B2B service innovation is innately iterative and collaborative, driven by a constant alignment of the means of service actualization and shared understanding in consideration of present institutions and context. Moreover, the mechanisms imply that actors must align at different dimensions. For example, firms must consider a strategic perspective, including considerations of changing market constellations (e.g. new actors), organizational aspects (e.g. mindsets, culture, resources, processes, and revenue models), and resource access and mobilization strategies (e.g. absorption, acquisition, sharing, and co-creation). More closely related to actors involved in the value creation process, actors must align their understanding of the B2B service innovation outcomes (e.g. value proposition) and responsibilities (before and during service creation and delivery). From a single actor's perspective, it becomes necessary to align and establish a service vision within the organization, creating a shared understanding of the B2B service innovation outcome and how the organization plans to achieve it, thus avoiding internal VCD.

Moreover, the thesis finds that by successfully engaging in VCC, actors need reflecting, aligning, and coping capabilities to facilitate adjusting service interfaces and infrastructure and/or dialectic process mechanisms (P8). Reflecting capability refers to the ability to assess internal and external factors that affect the organizational characteristics of VCC (e.g. service interfaces and infrastructure). The capability emphasizes understanding context, such as customer service use or emerging systems (e.g. new market actors). It also relates to a particular mindset (i.e. value thinking), emphasizing customer-centricity (e.g. customer needing) and the ability to determine the implications of service value propositions for integrating actors (e.g. lock-in or follow-up costs). Based on these reflections, focal actors can evaluate and differentiate between service activities that may provide value and those that may not. Therefore, the reflecting capability may be understood as a precondition of effective VCC.

Aligning capability is what then enables the actual value creation process between two or more actors and enhances the chances of VCC. In particular, it emphasizes the

orchestration of critical aspects, such as identifying helpful actors able to contribute (e.g. due to skills or resources) or reducing interaction complexity (e.g. adjusting actor numbers). In addition, it relates to the ability to communicate the value of the proposed resources, for instance, by identifying and applying appropriate boundary objects (i.e., a means that helps bridge multiple views of interpretation through a commonly understood artefact). It also refers to the way communication takes place. Actors must speak on the same level as other actors (e.g. expertise or professional terminology) to establish trust and commitment, reduce complexity, and avoid misunderstanding.

Coping capability relates to overcoming the challenges of the value creation process (e.g. adjusting service interfaces and infrastructure). Actors must balance implementing change and maintaining existing organizational paradigms (e.g. habits and associations). It is crucial to prevent organizational actors from feeling overwhelmed. Thus, successful balancing supports a degree of familiarity with the newness (e.g. using known methods in new contexts). Moreover, actors must continuously learn and welcome change as opportunities for development under circumstances of incomplete information, as value creation entails various aspects of subjectivity (e.g. institutions of value assessment), which can never be truly codified. Additionally, motivating the actors involved to persevere and establishing an understanding of togetherness (e.g. part of a shared journey) help overcome resistance to change.

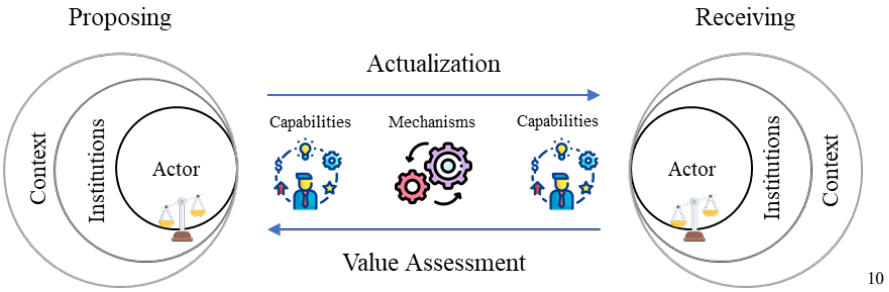


Figure 23: Value Creation in B2B Service Innovation

Figure 23 concludes the proposition-based theory above in a framework. It shows value creation in B2B service innovation as a complex process of resource-exchanging and -integrating actors, using capabilities and mechanisms to influence actor value states in consideration of the effect of institutions and context on value assessment.

[10] This figure has been designed using resources from Flaticon.com: Freepik; Wanicon

10.2. MANAGERIAL IMPLICATIONS

The thesis shows that value creation in B2B service innovation is a complex process of various interrelated actors affected by often intangible elements (e.g. institutions) independent of whether a firm is aware of it or not. Therefore, practitioners must start perceiving themselves as systemic actors to remain competitive. Each actor's resource exchange and integration affect the ability of other actors to create value. For example, take any firm representing a significant actor within its industry, deciding to do things differently from the norm (e.g. digitalizing, cutting down on fees, or enabling self-service). Suppose these actions are perceived as valuable by other actors (e.g. business customers). In that case, it will change how value is created within a system and potentially across systems (i.e. [systemic] innovation as a change process). For some, this change may create opportunities for VCC and for others for VCD.

Although it may be hard to grasp, this process is not limited to large or significant actors. Over time, small actions accumulate and lead to considerable change, and technology is its driving force as it connects actors and reduces exchange costs. This proliferation also highlights the fact that service innovation is not limited to the firm's known turf. Actors will increasingly engage and experience the synthesis of industries, products, and services (e.g. Volkswagen collaborating with Microsoft to create automated driving platforms). These developments have significant implications for value creation in B2B service innovation, and this thesis provides suggestions on how B2B firms can overcome these challenges and create value.

B2B actors should understand what characterizes potential VCD manifestations from various perspectives, including firm, industry, and system, to establish a map for further exploration. Moreover, it is essential to evaluate and learn which tangible and intangible factors affect the value assessment of actors, at least within the immediate boundaries of firm relationships. To learn about tangible factors, actors can utilize service design (thinking) means, such as customer journeys or stakeholders' maps. These tools support the understanding of aspects such as touchpoints, relationships, or pain points (e.g. bottlenecks). To learn about intangibles, actors can use empathy maps and personas, asking questions such as what institutions may be present in context, what effect these institutions have on value assessment, what influences these institutions, and how we can affect these factors.

This understanding enables actors to proactively orchestrate resource exchange and integration (e.g. framing) in meaningful ways. Thus, actors become value facilitators instead of service providers. These efforts require capabilities (e.g. data literacy, aligning, reflecting, and coping) that enable the use of mechanisms (e.g. adjusting service interface and infrastructure and dialectic process). However, firms must be aware that capabilities come at a cost, that they cannot have them all, and that some are better suited to address a given challenge than others. In addition, firms are subject to path dependencies that limit their ability to change capabilities. Therefore,

capabilities must be carefully nurtured (i.e. making choices) and constantly developed (e.g. change is inevitable), emphasizing even more so the need to understand oneself as a systemic actor, as this enables better directed capability building (Collis & Anand, 2018). This also highlights that no one capability configuration or mechanism can do it all (i.e. no one size fits all).

10.3. LIMITATIONS AND FUTURE RESEARCH

10.3.1. REFLECTIONS ON METHODOLOGY

A common concern of qualitative and case study research is whether its findings are generalizable (Flyvbjerg, 2006). Answering this question depends on asking the following question: generalizable to what or to what degree? Indeed, the thesis findings are not generalizable in a statistical sense; thus, their results do not provide universal truth Moreover, the thesis researched phenomena in various contexts (e.g. international service design relationships, digital servitization, and open banking), using small samples from a positivistic point of view. However, following the notion of analytical generalization (Yin, 2018) or theoretical generalization (Mitchell, 1983), case study research does not aim to provide general truths but to develop working theories or propositions (Ruddin, 2006). These propositions are to be tested in similar contexts, further sharpening the theory and its boundaries of applicability. Therefore, the findings are as generalizable as others deem them transferable (Lincoln & Guba, 1985), and further testing is encouraged.

For instance, Article 2 finds that failing to identify and align with actor institutions within the Chinese context leads to relationship termination. Future studies should test whether this proposition holds true in other geographical contexts. Similarly, Article 4 finds that actors in the emerging retail banking ecosystem (i.e. open banking) experience manifestations of VCD. Future studies should explore whether manifestations only show in open banking or other emerging ecosystem contexts such as EdTech, Biotech, or Esports.

Moreover, one may question the reliability and replicability of the study's results. In practice, the studies' reliability may be relatively low, as it is often complicated if not impossible to repeat a case study (e.g. single event in time). Besides, the thesis' primary data source interviews are difficult to replicate. Interviews are subject to many, often uncontrollable or hard-to-control aspects, such as trust, access, perception, context, point in time, or emotional state, further complicating replication by other researchers.

However, the thesis has made efforts to ensure the best generalizability and reliability. For instance, to mitigate subjectivity (e.g. bias), triangulation (i.e. multiple sources of evidence) (Bryman, 2012; Yin, 2018), discussion of results and interpretations with co-authors, and rigorous and systematic application of methods (e.g. Gioia et al.,

2013) was instrumental. Moreover, the thesis made precise explanations and documentation of data selection, collection, and analysis procedures (Eisenhardt & Graebner, 2007; Yin, 2018) and provided rich case and context descriptions (Geertz, 1973) to overcome issues of transparency.

10.3.2. REFLECTIONS ON THEORY

This study applies the synthesis perspective to theorizing value creation in B2B service innovation. Consequently, this thesis believes that a strict separation of products and services may not benefit theory development considering contemporary developments (e.g. proliferation of technology). However, given the identified fragmentation and inconsistency in the B2B service innovation literature (Article 1), future studies may want to consider applying the assimilation or demarcation perspective to clearly distinguish one product and service innovation from another. This separation may enable a more refined view and reduce ambiguity. Ultimately, it may facilitate the identification of similarities and differences across the perspectives informing future theory development.

Furthermore, the thesis investigates B2B service innovation from a service ecosystem perspective, as proposed by SDL (Vargo & Lusch, 2011). An aspect that has not been extensively expressed within the thesis' key findings is the issue of loose and tight coupling dynamics and the increasing complexity of clearly differentiating between the two (Article 4). Future research should consider agency theory (e.g. Eisenhardt, 1989; Jensen & Meckling, 1976) and organizational boundary (e.g. Santos & Eisenhardt, 2005) research to further explore consequences for value creation. For instance, what are the implications of information asymmetries or dependencies, and are these manifestations universal or actor-specific? What are the appropriate means (e.g. resources, capabilities, or mechanisms) of dealing with potentially adverse effects?

Moreover, the thesis used service design (e.g. Bitner et al., 2008; Stickdorn et al., 2018) to explore complexities within a dyadic firm-to-firm relationship (Article 2). In doing so, the study shows the value of this approach for a micro-level analysis. In addition, the thesis emphasizes the criticality of institutions for value assessment and ecosystem development (Article 4). Future research may want to consider the opportunity to apply service design to system-level analysis, considering its ability to enable a rich contextual understanding of present dynamics (e.g. institutions) and actors and the design of avenues for ecosystem development (e.g. Vink et al., 2021).

Finally, following the avenues above, the thesis emphasizes mechanisms as critical concepts in the value creation process (Articles 1, 2, and 4). However, mechanisms and their role in value creation in B2B service innovation remain poorly understood despite the first calls for more research (e.g. Lenka et al., 2017; Lusch & Nambisan, 2015). Although not included in this thesis, research related to this project points

towards a multitude of different mechanisms, such as systematic knowledge management, encouraging innovative behaviour, or service modularization and rebundling. Therefore, the thesis suggests further explorative and conceptual work. For example, future studies can utilize resource-based theory, particularly an extended VRIO framework (e.g. Della Corte & Mele, 2013; Kozlenkova et al., 2014), to characterize mechanisms that create sustainable competitive advantage.

10.4. EPILOGUE

I started the thesis with the quote, "something which can be bought and sold but which you cannot drop on your foot" (Gummesson, 1987), initiating the quest for more clarity about value creation, service, and service innovation in B2B settings. Through four studies and abstracting their findings into a theoretical framework (see Figure 7), I hope that academics and practitioners alike have gained a better understanding of value creation in B2B service innovation, turning the intangible into something tangible.

Suppose there is one thing you should remember from this thesis. In that case, it should be that successful value creation in B2B service innovation is about thinking systemically and acting holistically, and often, it is the intangible that defines the tangible.

REFERENCES

Bitner, M. J., Ostrom, A. L., & Morgan, F. N. (2008). Service blueprinting: A practical technique for service innovation. *California Management Review*, *50*(3), 66–94. https://doi.org/10.2307/41166446

Bryman, A. (2012). Social research methods. *OXFORD University Press*, *4th Edition*.

Collis, D., & Anand, B. (2018). *The Limitations of Dynamic Capabilities* (#20-029). https://hbswk.hbs.edu/item/the-limitations-of-dynamic-capabilities

Della Corte, V., & Mele, C. (2013). Resource-based view and Service-dominant logic: Similarities, differences and further research. *Journal of Business Market Management*, *6*(4), 192–213.

Echeverri, P., & Skålén, P. (2021). Value co-destruction: Review and conceptualization of interactive value formation. *Marketing Theory*, *21*(2), 227–249. https://doi.org/10.1177/1470593120983390

Eisenhardt, K. M., & Graebner, M. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, *50*(1), 25–37. https://doi.org/10.2307/20159839

Eisenhardt, K. M. (1989). Agency Theory: An assessment and review. *The Academy of Management Review*, *14*(1), 74. https://doi.org/10.2307/258191

Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry*, *12*(2), 219–245. https://doi.org/10.1177/1077800405284363

Geertz, C. (1973). Thick description: toward an interpretive theory of culture. In C. Geertz (Ed.), *The Interpretation of Cultures: Selected Essays* (pp. 3–30). Basic Books.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking qualitative rigor in inductive research. *Organizational Research Methods*, *16*(1). https://doi.org/10.1177/1094428112452151

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Kozlenkova, I. V., Samaha, S. A., & Palmatier, R. W. (2014). Resource-based theory in marketing. In *Journal of the Academy of Marketing Science* (Vol. 42, Issue 1, pp. 1–21). Springer Science and Business Media, LLC. https://doi.org/10.1007/s11747-013-0336-7

Lenka, S., Parida, V., & Wincent, J. (2017). Digitalization capabilities as enablers of value co-creation in servitizing firms. *Psychology & Marketing*, *34*(1), 92–100. https://doi.org/10.1002/mar.20975

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic Inquiry* (Y. S. Lincoln & E. G.

Guba (eds.)). SAGE Publications Inc. https://us.sagepub.com/en-us/nam/naturalistic-inquiry/book842

Lusch, R. F., & Nambisan, S. (2015). Service innovation: A service-dominant logic perspective. *MIS Quarterly*, *39*(1), 155–175. https://doi.org/10.25300/MISQ/2015/39.1.07

Lusch, R. F., & Vargo, S. L. (2014). Service-dominant logic: Premises, perspectives, possibilities. In *Service-Dominant Logic: Premises, Perspectives, Possibilities*. Cambridge University Press. https://doi.org/10.1017/CBO9781139043120

Micheli, P., Wilner, S. J. S., Bhatti, S. H., Mura, M., & Beverland, M. B. (2019). Doing design thinking: Conceptual review, synthesis, and research agenda. *Journal of Product Innovation Management*, *36*(2), 124–148. https://doi.org/10.1111/jpim.12466

Mitchell, J. C. (1983). Case and situation analysis. *The Sociological Review*, *31*(2), 187–211. https://doi.org/10.1111/j.1467-954X.1983.tb00387.x

Plé, L. (2017). Why do we need research on value co-destruction? *Journal of Creating Value*, *3*(2), 162–169. https://doi.org/10.1177/2394964317726451

Ruddin, L. P. (2006). You can generalize stupid! Social scientists, Bent Flyvbjerg, and case study methodology. *Qualitative Inquiry*, *12*(4), 797–812. https://doi.org/10.1177/1077800406288622

Santos, F. M., & Eisenhardt, K. M. (2005). Organizational boundaries and theories of organization. *Organization Science*, *16*(5), 491–508. https://doi.org/10.1287/orsc.1050.0152

Secomandi, F., & Snelders, D. (2011). The object of service design. *Design Issues*. https://doi.org/10.1162/DESI_a_00088

Stickdorn, M., Lawrence, A., Hormess, M., & Schneider, J. (2018). This is service design doing – Applying service design thinking in the real world – A Practitioners handbook. In *This is Service Design Doing*. O'Reilly Media, Inc.

Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing*, *68*(1), 1–17. https://doi.org/10.1509/jmkg.68.1.1.24036

Vargo, S. L., & Lusch, R. F. (2008). Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science*, *36*(1), 1–10. https://doi.org/10.1007/s11747-007-0069-6

Vargo, S. L., & Lusch, R. F. (2011). It's all B2B...and beyond: Toward a systems perspective of the market. *Industrial Marketing Management*, *40*(2), 181–187. https://doi.org/10.1016/j.indmarman.2010.06.026

Vink, J., Koskela-Huotari, K., Tronvoll, B., Edvardsson, B., & Wetter-Edman, K. (2021). Service ecosystem design: Propositions, process model, and future research agenda. *Journal of Service Research*, *24*(2), 168–186.

https://doi.org/10.1177/1094670520952537

Yin, R. K. (2018). *Case Study Research and Application – Design and Methods*. SAGE Publications Inc.

ISSN (online): 2794-2694
ISBN (online): 978-87-7573-930-1

AALBORG UNIVERSITY PRESS