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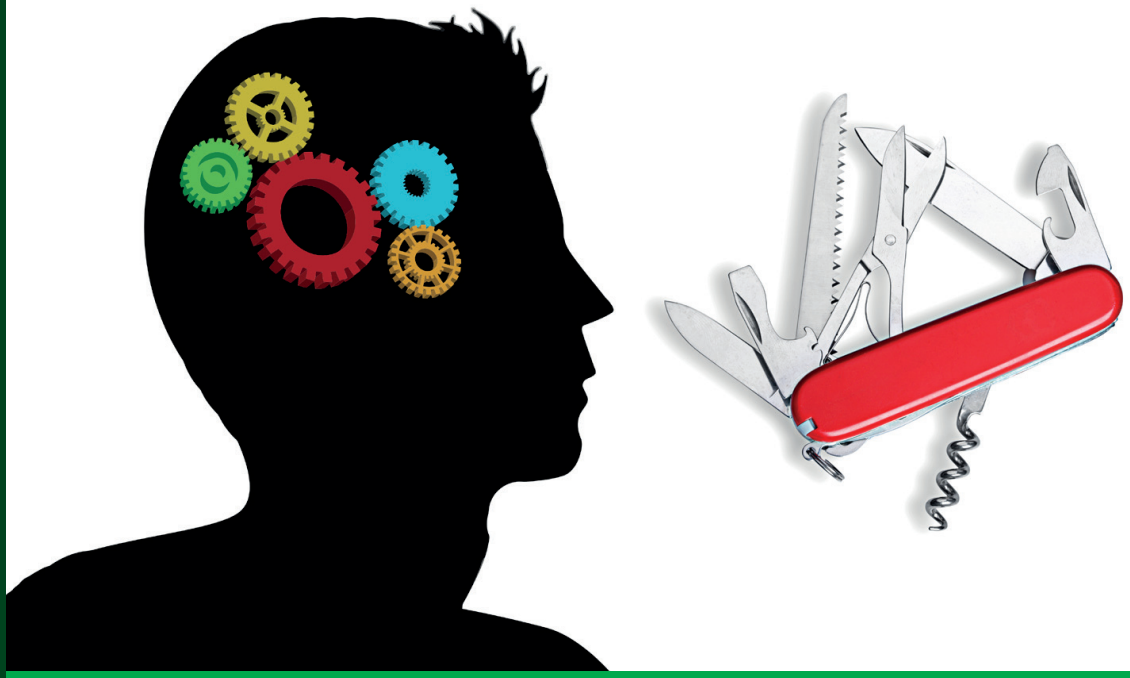

Inland School of Business and Social Sciences

Rolf Findsrud

PhD Dissertation

Theorizing about resource integration

Studies of actors and service innovation in dynamic contexts

PhD in Innovation in Services – Public and Private (INSEPP)
2020

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Ph.d.-avhandlinger i innovasjon i tjenesteyting i offentlig og privat sektor (INTOP)

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PhD Thesis

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Printed by: Flisa Trykkeri A/S

Place of publication: Elverum

PhD Thesis in Innovation in Services – Public and Private no. 13

ISBN: 978-82-8380-218-4 (printed version)

ISBN: 978-82-8380-219-1 (electronic version)

ISSN: 2535-6151 (printed version)

ISSN: 2535-6143 (electronic version)

Abstract

Resource integration represents the most foundational construct in service-dominant (S-D) logic, but efforts to theorize about the concept are scarce, especially in regards to actors and service innovation in dynamic contexts. By theorizing about resource integration from a S-D logic perspective, this thesis aims to contribute to filling that gap through two conceptual and two empirical papers, based on extensive literature reviews and interviews.

This thesis builds on a wide range of literature to theorize about resource integration, but it predominantly focuses on literature utilizing a service perspective and literature in psychology to study actors as resource integrators in value co-creation processes and service innovation, as well as what mechanisms enable and drive actors to perform these activities with greater success than other actors. The actor as a driver of activities in value co-creation processes not only needs to integrate the right resources, but also integrate the resources right. Furthermore, actors must be agile to respond to change and continuously innovate to maintain competitive advantages. Hence, explorative and exploitative resource integration should be considered the norm in companies, rather than the exception.

The results of this study contribute to linking two central concepts of service research, namely, resource integration and service innovation, and theorizing about resource integration as a phenomenon through combining conceptual and exploratory research about actors' ability to effectively and efficiently integrate resources and develop innovative solutions in services and service delivery through explorative and exploitative resource integration.

By zooming in on micro-level phenomena, we have investigated elements and mechanisms that give energetic force and drive the actors performing activities. In a complex, dynamic world filled with problems and challenges, being able to adapt to changing environments, being resourceful and creative, and being able to solve problems under stress may be the most important abilities actors need to face the unpredictable future.

Sammendrag

Ressursintegrering representerer en av de grunnleggende byggesteinene i tjenestedominant logikk, men forsøk på å teoretisere konseptet er få, spesielt med tanke på aktører og tjenesteinnovasjon i dynamiske kontekster. Ved å teoretisere ressursintegrering i et tjenesteperspektiv tar denne avhandlingen sikte på å bidra til å fylle dette teoretiske kunnskapsgapet ved hjelp av to konseptuelle og to empiriske artikler, som er basert på omfattende litteraturgjennomganger og intervjuer.

Denne avhandlingen bygger på et bredt spekter av litteratur for å teoretisere ressursintegrering, men fokuserer på teori som benytter et tjenesteperspektiv samt litteratur innen psykologi for å studere aktører som ressursintegratorer i verdisamskapingsprosesser og tjenesteinnovasjon, og hvilke mekanismer som muliggjør og driver aktører til utføre disse aktivitetene med større suksess enn andre aktører. Aktøren, som driver av aktiviteter i verdisamskapingsprosesser, må ikke bare integrere de riktige ressursene, men også integrere ressursene riktig. Videre må aktører være smidige for å kunne tilpasse seg endring og kontinuerlig arbeide med innovasjon for å opprettholde konkurransefortrinn, og utforskende og utnyttende ressursintegrering burde betraktes som normen i selskaper, snarere enn unntaket.

Resultatene fra studien bidrar til å koble to sentrale begreper innen tjenesteforskning, nemlig ressursintegrering og tjenesteinnovasjon, gjennom å kombinere konseptuell og utforskende forskning om aktørenes evne til effektivt å integrere ressurser og utvikle innovative løsninger innen tjenester og tjenestelevering, gjennom utforskende og utnyttende ressursintegrering.

Ved å zoome inn på fenomener på mikronivå så har vi sett på elementene og mekanismene som gir energi som driver aktører til å utføre aktiviteter. I en kompleks og dynamisk verden, som er fylt med problemer og utfordringer, så kan evnen til å tilpasse seg endringer i omgivelsene, å være ressurssterk og kreativ samt kunne løse problemer under stress, være de viktigste evnene aktører trenger for å møte den uforutsigbare fremtiden.

Preface

The writing of this thesis has been a long and, in many ways, life-changing journey. I am not the same person that started this journey in 2015. I have learned more in these years than I ever thought was possible to learn in so short a time. Even though it feels like I have been working on this thesis forever, considering the big picture, it represents a small time period in my life. Nonetheless, writing a thesis is never a one-person job. There is a saying that it takes a village to raise a child, and it took a village to write this dissertation. First, I want to express my gratitude to the two people with the greatest impact on my research, my supervisors, Professor Bård Tronvoll and Professor Bo Edvardson. Bård, it feels like every time we sit down and talk research, we discover something new and interesting, and the outcome really is emergent. I really appreciate all the talks, trips, and wines, we have had over the years. Thank you for being open to my crazy ideas and helping me to develop into the researcher I am today. I do not think you actually understand how much I have learned from you. Bosse, it is very comforting to know I have someone with your expertise and experience in my corner. I have always highly valued your world-class feedback. Thank you for everything you have done for me over the years, with Service Research Centre (CTF) at Karlstad University, Forskarskolan management and IT (MIT), and all the help with all the papers and this dissertation. Bård and Bosse, thank you. I hope that we will continue to do impactful research together for many years to come.

To all the people at CTF, especially the PhD group, and everyone that has been part of this academic journey, thank you for all the fun times in the Norwegian woods, Karlstad, Italy, the Netherlands, New York, Paris, and all the other places we have travelled. Thank you all for making this an experience I will cherish for the rest of my life. I hope to see more of all of you in the years to come. Sebastian, thank you for being my partner in crime on our book chapter in this thesis. Kaisa, thank you for taking the time to answer all my stupid questions about S-D logic when I was starting. You are one of the reasons I now understand S-D logic.

To my colleagues at Inland Norway University of Applied Sciences, thank you for all your encouragement, kind words when I was overwhelmed with work, and all your support. I am glad I have such supportive colleagues.

To my opponents on the 50% and 80% defenses, Dr. David Sörhammar and Professor Line Lervik−Olsen, thank you for your invaluable feedback and helping improve this thesis.

The most important part of my village has been my family. To my wife, Linn, who was alone with the kids while I was traveling and working: You have had to take care of all the kids while working

full-time as a teacher. It is not easy getting three kids ready for kindergarten and school, and still get to work on time, especially when I crack a joke about having a bad morning because the bacon at the hotel was soggy. Thank you for letting me follow my dreams. You are my guiding star, my foundation, my home, and I could not have done this without you. As Ozzy says: "Mama, I'm coming home!" I love you. And, yes, this is not my dissertation, but our dissertation. To my kids, Ellinor, Jenny, and Sigurd: Without you, this thesis would probably have been finished two years earlier, but I would not have it any other way. You three represent my motivation and my heart. This dissertation was finished when the world was under a pandemic. Norway had the strongest social regulations since the second world war, meaning all five of us had to stay in isolation at home. Teaching full-time, while Linn and I home-schooled three kids under the age of 10 years old did not make finishing this thesis any easier, but we got through it together, here in our village, "village Findsrud".

To my parents, Else Marie and Bjørn Gunnar, thank you for the encouraging words when things weren't always smooth sailing, and thank you for being a crucial part of village Findsrud and all your help in making the village run as smoothly as possible. I could not have done this without you.

To you all, from the bottom of my heart, thank you!

Flisa, May 2020

Rolf Findsrud

To my family: Linn, Ellinor, Jenny, and Sigurd

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2. Findsrud, R, Tronvoll, B, and Edvardsson, B (2018) Motivation: The missing driver for theorizing about resource integration. *Marketing Theory* 18(4), 493–519.
3. Findsrud, R, and Tronvoll, B. Am I doing it right? Resource integration performance through multidexterity. Submitted to *Journal of Business Research*.
4. Findsrud, R. An agile approach to service innovation: Creating valuable service innovation with agile resource integration. Submitted to *Journal of Creating Value*.

Prologue

It was the end of the summer holiday, and my whole family of five was at the airport, slated to fly back home. We arrived early and passed through the security check without any trouble when we received word that the plane was delayed, and we had several hours of waiting ahead of us. I do not know whether you have traveled with an active three-year-old child, but I can tell you that a long delay at an airport is not optimal. Luckily, this was not my first rodeo, having an ace up my sleeve in the form of a new toy car, an Audi R8. We found an empty gate and sat down to wait, and when the three-year-old started to get restless, I pulled out the car. The boy was happy, I was happy, everyone was happy. I began helping him unbox the car, but in the process, discovered that it was screwed to the box. So, we are sitting at the airport, we have passed through security, and the boy is crying because his car is stuck to cardboard. At this point, I asked myself, "what would MacGyver do?"

> Because the purpose of business is to create a customer, the business enterprise has two—and only two—basic functions: marketing and innovation. Marketing and innovation produce results; all the rest are costs.
>
> *– Peter Drucker, management guru*

1 Introduction

Every day, we face problems that need to be solved, requiring us to use resources, adapt to changing environments, and exercise resourcefulness and creativity. The ability to solve problems, often under stress and with limited resources, may be best embodied in the 1980s television series *MacGyver*.[1] MacGyver is an agent who uses objects around him (e.g., a paperclip and a shoelace) in unconventional ways, wielding ingenuity and innovation, to resolve issues. Resources, however, have only potential value (Zimmermann, 1951; Vargo and Lusch, 2004; Edvardsson et al., 2014)—a prospect that finds realization through a behavioral and cognitive element (i.e., an activity) (Findsrud et al., 2018: Paper 2). On this basis, then, the core of resource integration is an actor's *use* of resources (Findsrud et al., 2018: Paper 2), which generates opportunities for the creation of new potential resources that can be utilized to access additional resources and create new ones (Vargo and Lusch, 2011). Likewise, resource integration is a context-dependent construct (Koskela-Huotari and Vargo, 2016), and contexts are dynamic and continually changing (Ng et al., 2012). This reality necessitates that actors constantly adapt. Furthermore, resource integration is performative (Hibbert et al., 2012: Findrud and Tronvoll: Paper 3), and actors have different abilities in unlocking the potential value of available resources (Zimmermann, 1951; Edvardsson et al., 2014).

However, despite the vital role of resource integration in value co-creation (Vargo and Lusch, 2016) and its foundational function in service logics (Skålén, 2018), minimal attention has been paid to its definition and theorization as a phenomenon (Findsrud et al., 2018: Paper 2), especially under dynamic contexts (Findsrud and Tronvoll: Paper 3). Resource integration enable actors to co-create

[1] "Angus 'Mac' MacGyver was a secret agent, hero of an ABC action–adventure television series that ran from 1985−1992. MacGyver was a troubleshooter who used his scientific training and existing resources in a creative way, to create simple, albeit ingenious, solutions to overcome unexpected problems or to resolve difficult situations. His trademark was to be resourceful and innovative." Perera R and Moriarty HJ (2011) The MacGyver effect: alive and well in health services research? *BMC health services research* 11(1): 226.

value in new and better ways, thereby giving rise to service innovation (Koskela-Huotari et al., 2016; Lusch and Nambisan, 2015), alternatively stated resource integration represents the microfoundation from which service innovation emerges (Findsrud and Dehling, 2019: Paper 1). Service innovation is broadly regarded as one of the primary sources of competitive advantage in an increasingly service-oriented economy (Paswan et al., 2009; Carlborg et al., 2014; Kindström and Kowalkowski, 2014). Correspondingly, understanding resource integration and the mechanisms that lead to service innovation is important for both scholars and practitioners (Findsrud and Dehling, 2019: Paper 1).

According to Edvardsson et al. (2014), the discussion surrounding resource integration has traditionally emphasized the means through which actors such as customers, suppliers, and other interested stakeholders use their knowledge and skills to co-create value. Moreover, the discussion is often grounded in theories such as the resource-based view (Barney, 1991) or resource-advantage theory (Hunt and Morgan, 1995). Even in more recent articles on resource integration, focus has tended to be directed toward what resources are integrated (e.g., Peters et al., 2014; Peters, 2016) rather than how and why actors integrate resources. The last decade, however, witnessed a shift from the transactional (i.e., value-in-exchange) mindset to a use-based (i.e., value-in-use) way of thinking—a switch driven by the introduction of service-dominant (S-D) logic (Lusch and Vargo, 2014). A focus that originates from resources, rather than the application of resources, emphasizes a value-in-exchange perspective, whereas the act of using resources implies a value-in-use perspective. In addition, there has been a general zooming out—more strongly concentrating on a macro analytical level—in service research with the introduction of service ecosystems (Akaka et al., 2012; Vargo and Akaka, 2012) and institutions (Vargo and Lusch, 2016). In their article about the evolution of and future research on S-D logic, Wilden et al. (2017: 356) posited that S-D logic will "clearly benefit from a microfoundational research agenda, and the application of empirical studies of micro-level phenomena that influence value co-creation." Thus, there is now a need to zoom in on resource *use* (i.e., resource integration activities) that results in service innovation and value co-creation (Findsrud and Dehling, 2019: Paper 1). Exemplified by microfoundational research related to S-D logic that have been emerging in the literature (e.g., Storbacka et al., 2016; Hollebeek et al., 2019).

With consideration for the above-mentioned issues, this thesis studied actors[2] (e.g., employees, individuals, firms) as resource integrators in value co-creation and service innovation processes

[2] *Actors* can refer to both individuals and groups of individuals, but this thesis focused on the former.

from the perspective of S-D logic. It examined what mechanisms enable and drive actors to perform these activities with greater success than others, that is, executing a task with greater effectiveness and efficiency than that achieved by "rival" actors (Tangen, 2005) and thereby gaining a strategic benefit. In an editorial in the *Journal of Marketing*, Kumar (2015) argued for the need to demonstrate the efficiency and effectiveness of marketing activities. The same knowledge gap exists with respect to the conceptualization of effectiveness and efficiency in resource integration activities. Nevertheless, effectiveness and efficiency do not tell the full story of performance.

The Greek philosopher Heraclitus stated that "change is the only constant." This means that innovation is not a choice; firms *must* engage in exploration and exploitation activities (Findsrud and Tronvoll: Paper 3). In the innovation literature, exploration and exploitation are core dimensions concerning innovation, organizational design, organizational learning, competitive advantage, and organizational survival (Wilden et al., 2018). The necessity of adapting to change and continuously working with innovation is a key feature of the ability to maintain a competitive advantage and can arguably be considered the norm in companies (Findsrud: Paper 4). This perspective finds support in management guru Peter F. Drucker, who asserted that businesses have only two functions: marketing and innovation. "The aim of marketing is to know and understand the customer so well the product or service fits him and sells itself" (Drucker, 1986: 49). An important matter for consideration, however, is that switching focus from selling and value-in-exchange to value-in-use does not mean that understanding the customer only as an actor that buys something is sufficient; we must also understand actors as resource integrators involved in value co-creation processes through resource integration activities. Companies today must be multidextrous in balancing and simultaneously engaging in activities that improve performance, which consists of four dimensions, namely, effectiveness, efficiency, exploration, and exploitation (Findsrud and Tronvoll: Paper 3). At the same time, they must remain agile in adapting to changes in contexts (Findsrud: Paper 4).

Kleinaltenkamp et al. (2012) referred to *resource integration* as the process(es) and form(s) of collaboration performed by actors with agency (Edvardsson et al., 2014; Bandura, 2001b). *Agency* is defined here as the ability of self-reflexive actors to act with choice (Archer, 2000) and verifies the need to extend our understanding of what mechanisms drive actors and influence their choices in conceptualizing resource integration. Engaged actors use their operant resources to act on operand resources during the resource integration process (Peters et al., 2014). Investigating resource integration necessitates an improved comprehension and explanation of actors' motivational drivers for how and why to integrate resources as performative prerequisites of the activities and interactions in which actors engage (Edvardsson et al., 2014: Paper 2; Findsrud et al.,

2018). Moreover, resource integration exerts consequences in the form of outcomes.[3] These outcomes are often generically referred to in the literature as value co-creation, and value is phenomenologically determined by the beneficiary (Vargo and Lusch, 2008a; Vargo and Lusch, 2016). As previously stated, a potential outcome of resource integration activities is service innovation.

1.1 Research aim and research questions

The heart of S-D logic is resource integration activities performed by actors, and theorizing on this phenomenon is the aim of this thesis. To this end, I explored actors that integrate resources using dynamic contexts and service innovation as empirical domains. Zooming in extends our understanding of actors performing activities and the prerequisites that constrain, guide, and give energetic force to actors. The aim was achieved by developing a theoretical framework for understanding and explaining resource integration, or more specifically, an actor as the driver of activities in value co-creation processes; it was accomplished also by ascertaining how actors need to not only integrate the right resources but also integrate resources right (Drucker, 1977) as well as knowing what is "right" in context (Findsrud and Tronvoll: Paper 3).

A *theory* is "a systematically related set of statements, including some law-like generalizations that are empirically testable" that "increase scientific understanding through a systematized structure capable of both explaining and predicting phenomena" (Hunt, 1983: 10; see also Hollebeek et al., 2019). The process of theorizing, or "the interface between relevant theoretical/empirical domains as well as the use of bridging, or middle-range theory," has received little attention in the literature on resource integration (Peters et al., 2014: 250). By theorizing about resource integration, this thesis responded to three calls: (1) the call for a deeper understanding and theorizing about resource integration (e.g., Kleinaltenkamp et al., 2012; Peters et al., 2014), (2) the need to probe into performance in service (Ostrom et al., 2015), and (3) the requirement to identify drivers of sustained service innovation (Ostrom et al., 2015).

The performance literature frequently discusses two dimensions, namely, effectiveness and efficiency. Improving the effectiveness and efficiency of resource integration often involves finding novel or improved ways of integrating resources or finding new resources through exploration and

[3] Resource integration is a continuous process and, thus, lacks an ending. In this thesis, however, outcomes served as analytical snapshots in a continuous process. See Chapter 2.1.4.

exploitation activities; such improvements are also the source of service innovation (Edvardsson and Tronvoll, 2013: see also Findsrud: Paper 4). The service sector in developed economies is now dominating in terms of gross domestic product (Gustafsson, 2016). Service innovation represents a crucial avenue for growth among companies (Coutelle-Brillet et al., 2014; Helkkula et al., 2018), and their role in creating economic progress and well-being is increasingly acknowledged (den Hertog et al., 2010). There is a need for academics and practitioners to theorize about psychological mechanisms that drive and enable resource integration and understand the mechanisms that drive and enable service innovation. *Mechanisms* are "a set of interacting parts–an assembly of elements producing an effect not inherent in any one of them. A mechanism is not so much about 'nuts and bolts' as about 'cogs and wheels' [...] the wheelwork or agency by which an effect is produced" (Hernes, 1998: 74; see also Davis and Marquis, 2005: 336). In this respect, the current work contributes to the literature by providing a framework for understanding the mechanisms that underlie actors' resource integration activities in dynamic contexts and the mechanisms that may account for service innovation. Theorizing on resource integration involves combining conceptual and exploratory research on the ability of actors to effectively and efficiently integrate resources and develop innovative solutions in services and service delivery through explorative and exploitative resource integration that uses agile approaches.

Correspondingly, the thesis addressed sub-aims expressed as the following research questions (RQs):

RQ1: What mechanisms drive and enable actors to integrate resources?

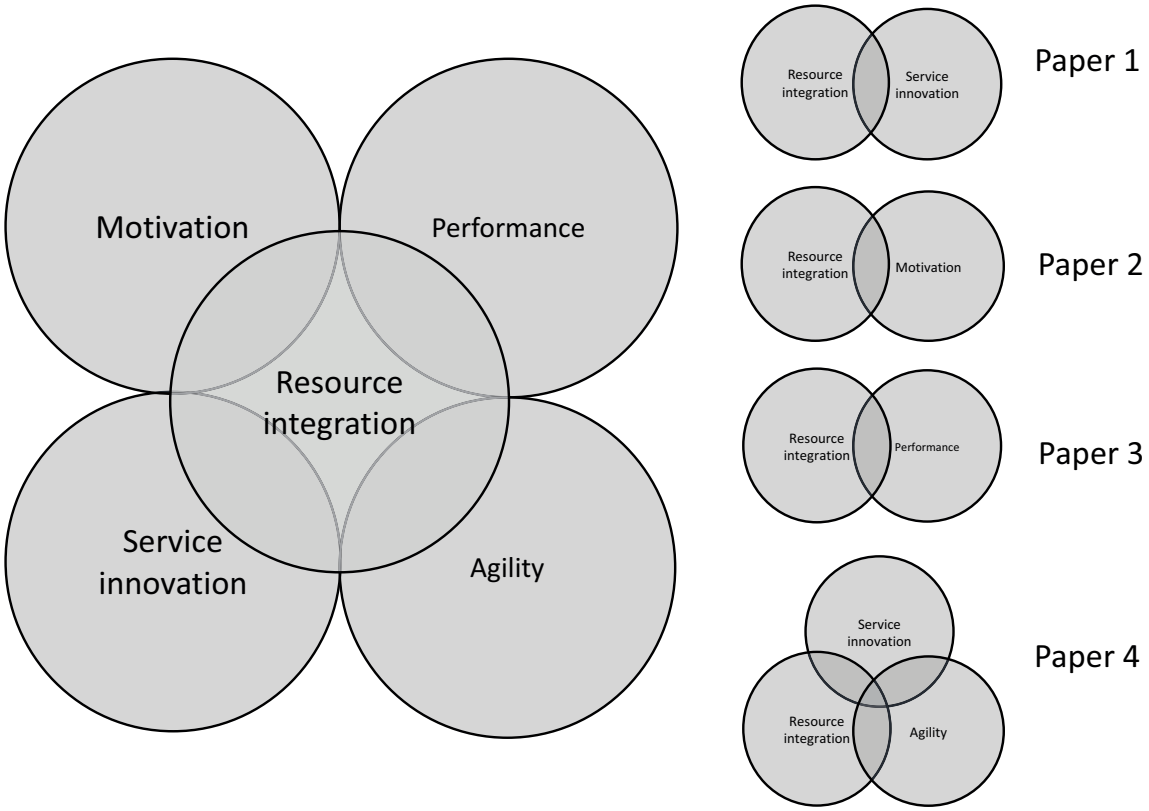
RQ2: What are the characteristics of activities that result in successful resource integration?

RQ3: What mechanisms drive and enable actors to achieve service innovation?

The integrative framework described in Chapter 5 was the product of four papers (studies) appended to this thesis. The theoretical foundation of the thesis was built mainly on reviews of three streams of research on value co-creation, resource integration, and service innovation. On the basis of the knowledge gaps found in the reviews, five concepts were identified as encompassing the topics pursued in the studies documented in the appended papers: resource integration, service innovation, motivation, resource integration performance, and agile resource integration. An overview of how these core concepts were addressed in the four studies is depicted in Figure 1. Study 1 projected resource integration as a microfoundation for service innovation, while Study 2 showed motivation as a fundamental driver that is missing in existing theorization about resource integration. Study 3 was an investigation into the performance aspect of resource integration, and Study 4 introduced agile resource integration as an approach to service innovation.

The papers that recount these studies are summarized in Table 3, and a short introduction to each follows.

Figure 1. Overview of main concepts and their link to each paper



The first paper is a published book chapter entitled "Resource Integration as a Microfoundation for Service Innovation." The purpose of the research was to integrate and relate microfoundational characteristics and language to the lexicons and characteristics of resource integration and service innovation in S-D logic for the establishment of resource integration as a microfoundation of service innovation. The study suggested that conditions designed to facilitate emergent resource integration leads to more radical service innovation, whereas additive resource integration evolves into more incremental service innovation. It conceptually explained how service innovation may emerge from the activities of actors, with focus on individuals, interactions, and the process of aggregation.

The second paper, "Motivation: The Missing Driver for Theorizing about Resource Integration," was published in *Marketing Theory* and recounts the conceptual research that illustrated the importance of implementing psychological mechanisms in S-D logic. S-D logic have predominately centered on sociological mechanisms. The study contributes to the development of the conceptualization of resource integration through its focus on actors as drivers of resource

integration and its explanation of how motivation as a psychological mechanism gives rise to resource integration. Resource integration reflects the activities in value co-creation and is enabled by competencies, but competencies alone are insufficient for resource integration to occur. Motivation is therefore the missing driver in theorizations about resource integration; this driver infuses energy (direction, intensity, persistence) into resource integration efforts and expands the explanatory power of sociological factors that guide actors.

The third paper records an exploration into the concept of resource integration performance. The study offered a conceptual framework for understanding such performance and the multidexterity needed to juggle effectiveness, efficiency, exploration, and exploitation for the purpose of achieving desirable and viable outcomes. Resource integration performance is an actor's observed ability to create value via the multidextrous balancing of explorative and exploitative activities in pursuit of effectiveness and efficiency when using available resources in a context (Findsrud and Tronvoll: Paper 3).

The fourth paper documents the examination of specific drivers and enablers of service innovation, suggesting an agile approach for actors to continuously create successful service innovation. The research entailed conceptualizing agile resource integration, demonstrating that a phenomenological understanding of context is key for comprehending the nature and development of service innovation. Through qualitative case studies of companies regarded as innovative in their respective industries, the study uncovered what differentiates actors in achieving effective solutions that evolve into service innovation. Finally, it combined and classified the enablers and drivers in accordance with the conceptual framework of resource integration.

Table 1. Summary of the appended papers

	1	2	3	4
Title	Resource integration processes as microfoundation for service innovation	Motivation: The missing driver for theorizing about resource integration	Am I doing it right? Resource integration performance through multidexterity	Agile approach to service innovation: Creating valuable service innovation with agile resource integration
Aut	Findsrud, Rolf and Dehling, Sebastian	Findsrud, Rolf, Tronvoll, Bård, and Edvardsson, Bo	Findsrud, Rolf and Tronvoll, Bård	Findsrud, Rolf
Aim	The purpose of the study was to integrate and relate microfoundational characteristics and language with the lexicons and characteristics of resource integration and service innovation in S-D logic to establish resource integration as a microfoundation of service innovation.	The aim of this research was to use motivation theories to further explain what drives resource integration.	The study was aimed at developing a conceptual framework for understanding multidexterity for resource integration performance through effectiveness, efficiency, exploration, and exploitation.	The research explored the drivers and enablers of service innovation and the factors that differentiate actors in achieving effective service innovation.
Main contribution	The study theoretically contributes to the service innovation literature by using resource integration as a theoretical framework for understanding an individual actor's resource integration behaviors within practices, the development of practices through resource integration, and the role of actors in changing practices over time.	This study contributes to existing research by including actors' motivation as drivers of resource integration and thus explaining how motivation at the micro-level directs and shapes resource integration processes and outcomes. Furthermore, we put forward four propositions and a new definition and thus conceptualized resource integration.	This research contributes theories about resource integration by conceptually defining resource integration effectiveness, resource integration efficiency, explorative resource integration, and exploitative resource integration, as well as the multidextrous capability of an actor to balance these dimensions.	This work contributes to the service literature by uncovering an actor's key enablers and drivers for effective service innovation and thus enabling managers to organize resources for maintaining competitive advantage.
Out	*Service Innovation for Sustainable Business* (book)	*Marketing Theory*	*Journal of Business Research* (*JBR*)	*Journal of Creating Value* (*JCV*)
Status	Published	Published	Presented at *Quis 2019* Manuscript submitted to *JBR*	Presented at *Naples Forum* Manuscript submitted to *JCV*
RQs	RQ3	RQ1	RQ1 and RQ2	RQ2 and RQ3
Role in project	Sebastian and I equally contributed to all aspects of developing and writing the paper.	I led the development, literature review, theorization, and writing of the article and received conceptual input and feedback from my co-authors.	I led the development of the conceptual framework, the data collection, and the writing of the article and received conceptual input and feedback from my co-author.	I am the sole author of this manuscript.

1.2 Key concepts and terminology

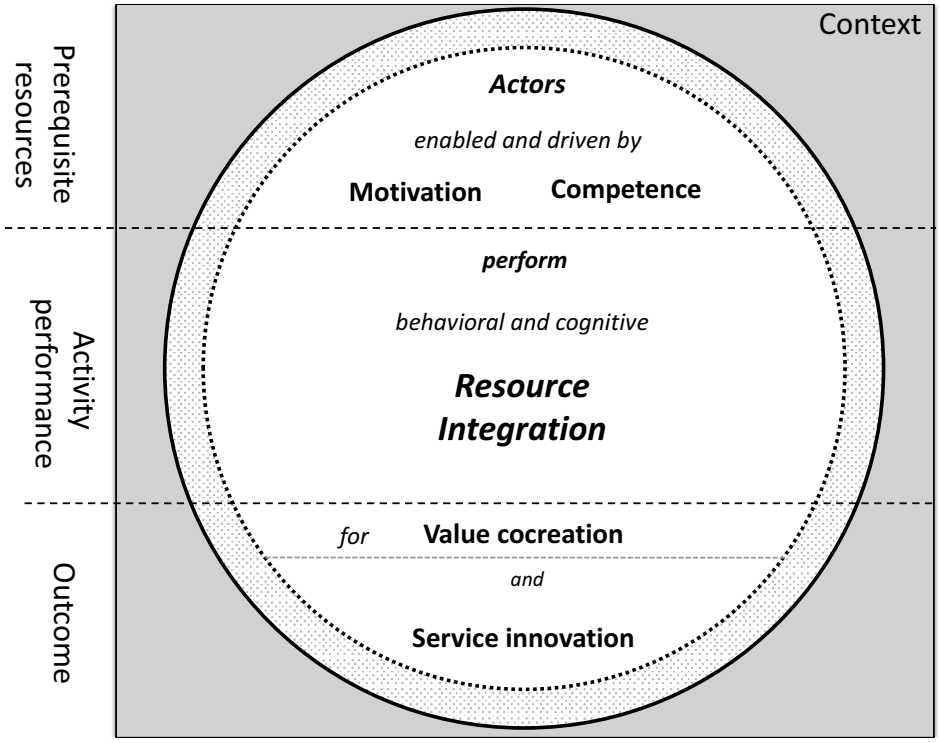
An important issue within scientific research is the lexicon and vocabulary used to explain phenomena. A language is dynamic; meanings change over time, and new words are incorporated into a lexicon. The language of S-D logic has developed since its beginning in 2004, and much of the work devoted to this issue has been concerned with the generation of a more robust lexicon through the reframing of previously identified concepts and reconciling differences in language (Vargo and Lusch, 2017). Kohli (2006) argued that thinking is profoundly influenced, indeed trapped, by the words that we use and the images that they evoke. A critical requirement, therefore, is to find new labels and phrases that help us think and conceptualize afresh. An example is how innovation is not means of inventing things but as an avenue for developing systems for value co-creation (Vargo and Lusch, 2017). Some concepts regarded as important in this thesis represented a conceptual starting point for the research. Their working definitions are provided in Table 2. How these definitions were selected and used is discussed in more detail in the section on theoretical framing. Throughout the research, these definitions were developed, or new definitions were created. They were revisited at the end of the study, with the final definitions of the key concepts summarized in Table 11 (Chapter 5.4.3.).

Table 2. Working definitions of key concepts

Concept	**Definition**
Resource integration	A process of value creation activities (Kleinaltenkamp et al., 2012)
Value co-creation	The actions of multiple actors, often unaware of each other, that contribute to each other's well-being (Vargo and Lusch, 2008a; 2016)
Service innovation	A novel (re)combination of resources (Witell et al., 2017: 290)
Actors	Individuals or formal or informal organizations, such as firms, peer groups, families, or pressure groups (Edvardsson et al., 2014)
Motivation	A set of energetic forces that originate both within as well as beyond an individual's being, to initiate work-related behavior and to determine its form, direction, intensity, and duration (Pinder, 2008: 11)
Competencies	One's knowledge and skills (Vargo and Lusch, 2004; 2008b).
Performance	A combination of efficiency, that is, doing things right (Drucker, 1977), and effectiveness, that is, doing the right things (Drucker, 1977; Kumar and Gulati, 2009; Roghanian et al., 2012)

The manner by which the main concepts in this thesis relate to one another is depicted in Figure 2.[4] Actors perform resource integration that is enabled and driven by competence and motivation. Performance is a concept that links prerequisites and outcomes (Fitzgerald et al., 1991), and the outcomes of resource integration are value co-creation and, potentially, service innovation.

Figure 2. Integrative framework of resource integration in this thesis



S-D logic has been characterized by a general zooming out that allows a more holistic and dynamic perspective of value creation among a wider, more comprehensive configuration of actors (Vargo and Lusch, 2016). Furthermore, a systems perspective uncovers additional structural features (e.g., institutions and institutional arrangements) that render micro-level phenomena more understandable (Chandler and Vargo, 2011; Vargo and Lusch, 2016). Following the logic of microfoundations, the next step is to zoom back in and assess how actors' choices and interactions create structure, the behaviors of actors within structures, and the role of actors in shaping the evolution of structures over time (Barney and Felin, 2013). According to the fourth axiom of S-D logic, value is always uniquely and phenomenologically determined by the beneficiary (Vargo

[4] This figure is a simplified version. The complete version of the integrative framework is depicted in Figure 11, Chapter 5.4.

and Lusch, 2008a; Vargo and Lusch, 2016). Thus, understanding how resource integration relates to value co-creation requires combining a holistic systems perspective, which is the most common perspective in S-D logic, with an individual view of resource-integrating actors. Combining perspectives, however, creates challenges concerning lexicon and vocabulary. For instance, I view value-in-context and value co-creation not as separate but the same phenomena that are portrayed and described from different viewpoints. The former is subjectively determined by an actor, whereas the latter is a more holistic and dynamic stance at a higher level of abstraction. In other words, both value-in-context and value co-creation are an evaluation of something at a given point in time in an unending process of resource integration by actors. Both also result from actors' integration of resources and can be viewed as an activity and a process. Value creation is used somewhat interchangeably with resource integration, and the terms "value creation" and "value co-creation," by default, have a positive valence, forming a misconception that the outcome of value (co-)creation is always positive. The reality is that value is unique for each actor and changes with time (Ng and Smith, 2012), meaning that value co-creation may translate to value created for one actor even as it is destroyed for another actor. Conversely, resource integration is arguably a more valence-neutral term. To further add to the conceptual complication, different service logics (e.g., S-D logic and service logic) infuse various meanings into constructs such as value co-creation. Value co-creation is further discussed in Chapter 2.1.4.

1.3 Thesis outline

This thesis is structured as follows. The second chapter provides an overview of the theoretical background of the thesis. Following the steps of MacKenzie et al. (2011) in construct conceptualizations, I present a general idea of the theoretical framing of my research, relying on the literature centered on resource integration, service innovation, and value co-creation. The third chapter starts with a discussion of my philosophical position, followed by the research methods used in the studies documented in the appended papers. The fourth chapter presents the main results of the appended papers, which were reviewed and supplemented, and links the contributions in these works to the overall RQs that guided the thesis. The fifth chapter revisits the activities and outcomes related to prerequisite resources on the basis of the findings documented in the appended papers. The chapter is summarized in 12 general assumptions on resource integration as well as an integrative framework for conceptualizing resource integration per se and resource integration as a source of service innovation. It ends with a description of limitations and potential avenues for further research.

Insanity is doing same thing over and over again and expecting a different result.

– Albert Einstein, famous physicist

2 Theoretical framing

This chapter outlines the theoretical background and the frame of reference for the thesis. It focuses on presenting the conceptual background for theorizing on resource integration. The chapter starts by addressing the key characteristics of resource integration (2.1), namely, actors as resource integrators (2.1.1), prerequisite resources (2.1.2), activities (2.1.3), and outcomes (2.1.4). The conceptualization of resource integration is summarized in eight general assumptions about resource integration, with a discussion of opportunities for extending the conceptualization in Chapter 2.2. Given that this thesis used service innovation as a context for exploring resource integration, an overview of service innovation from the perspective of S-D logic is also provided (2.3). The chapter concludes with final comments on the theoretical framing (2.4).

2.1 Current conceptualization of resource integration within S-D logic

MacKenzie et al. (2011) posited that construct conceptualization starts with a literature review that is intended to gain an overview of the principal characteristics of resource integration and how it has been defined. Studies on resource integration tend to focus on resources integrated (e.g., Peters et al., 2014; Peters, 2016), with the discussion of resources frequently grounded in theories such as the resource-based view (Barney, 1991) or resource-advantage theory (Hunt and Morgan, 1995). The literature denotes resource integration as a process, an activity, or a step in the value co-creation process (Plé, 2016) and a phenomenon that involves actors' use of resources. On this basis, therefore, resource integration research should shift focus to an application perspective. Studying resource integration from theories underlain by a standpoint oriented toward resources (e.g., resource-based view, resource advantage theory) and revolving around the battle for resources (Madhavaram and Hunt, 2008) underscores a value-in-exchange way of thinking. This mindset implies that a resource is static and constant and thus *is*. However, there is a consensus in the S-D logic literature that resources have potential value that *become*, and how and why actors integrate resources is linked to value-in-use. Correspondingly, the overview that I provide on the current conceptualization of resource integration was based on a literature review[5]

[5] The process underlying the literature review is described in Chapter 3.2.1.

that involved the use of "resource integration" as a search term. Accurately defining resource integration requires elaborating its characteristics for necessity and sufficiency. Therefore, I next discuss how resource integration has been used in prior research, the assumptions underlying such works, and the prerequisites of resource integration, resource integration activities, and the outcomes of resource integration and their conceptual domains.

In the literature review on resource integration, the lack of a shared, established view among scholars on the scope and locus of this phenomenon became evident. Findsrud et al. (2018: Paper 1) declared that the term "resource integration" typically refers to an empirical phenomenon that has no clear definition or description. Although some definitions have been put forward (Table 3), these reflect the absence of consensus. Prerequisites represent the specific resources required for the focal phenomenon (i.e., resource integration) to occur. Competencies are identified as a prerequisite of resource integration, and resource integration is presented as part of actors' value co-creation efforts and processes. Resource integration may intuitively be of a nature wherein scholars assume the term itself as equivalent to a definition given that the word "integration" means combining into a whole; thus, resource integration is the combination of resources into something new. However, defining integration as the act of integrating does not contribute to theorizations on resource integration (Plé, 2016).

The lack of conceptualization regarding resource integration becomes evident as some definitions and conceptualizations of the phenomenon are missing a demarcation to value creation and value co-creation. A case in point is Peters et al. (2014: 254), who defined resource integration as a continuing process involving "a series of activities performed by an actor." The authors based their definition on the work by Payne et al. (2008) with respect to a customer's value creation process. Similarly, Kleinaltenkamp et al. (2012) denoted resource integration as a process comprising value creation activities. From these definitions, we can assume that Peters et al. (2014) and Kleinaltenkamp et al. (2012) interpreted value creation and resource integration as close to identical. Arguably, however, these concepts have specific characteristics that conceptually differentiate resource integration, value creation, and value co-creation (Chapter 1.2). As Table 3 shows, much diversity typifies the characteristics included in the definitions, pointing to a lack of consensus on what attributes are necessary or sufficient to delineate what resource integration is (MacKenzie et al., 2011; see also Sartori, 1984). Consensus exists among scholars as to the notion that resource integration is performed by actors or resource integrators, but this position has also stimulated discussions of what can be considered an actor. Actors that serve as resource integrators are described next, followed by a presentation of the key characteristics of resource integration found in the literature, namely, prerequisites, activities, and outcomes.

Table 3. Conceptualizations and definitions of resource integration

		Key characteristics of description		
Author	Description	Prerequisites	Activity	Outcome
Lusch and Vargo (2006: 283)	… integrate and transform microspecialized competencies into complex services …	Microspecialized competencies	Integrate and transform	Complex services
Vargo (2008: 213)	… each actor is its own primary resource integrator, using the application of its uniquely configured resources as the currency for resource enrichment through the exchange (economic and otherwise) of service.	Uniquely configured resources	Application	Resource enrichment
Xie et al. (2008: 109)	Consumers act as resource integrators when they use their competence, tools, raw materials, and sometimes professional services to produce.	Competence, tools, raw materials, and sometimes professional services	Use	Maintenance services, entertainment, meals, etc. for themselves
Grönroos and Ravald (2011: 8)	As resource integrators, customers operate on resources made available to them by a given provider, by other market actors or by themselves in order to increase their well-being.	Available resources	Operate on	Well-being
Haase and Kleinaltenkamp (2011: 157)	Application of skills	Skills	Application	
Witell et al. (2011: 143)	Applying […] uniquely configured skills and resources	Skills and resources	Applying	
Díaz-Méndez and Gummesson (2012: 576)	Resource integration is largely an interaction process between the parties.		Interaction	
Hibbert et al. (2012: 248)	Customer resource integration refers to the processes by which customers deploy their resources as they undertake bundles of activities that create value directly or that will facilitate subsequent consumption/ use from which they derive value.	Resources	Deploy	Create value
Kleinaltenkamp et al. (2012: 203)	Integration requires process(es) and forms of collaboration.		Collaboration	

		Key characteristics of description		
Author	Description	Prerequisites	Activity	Outcome
McColl-Kennedy et al. (2012: 375)	… activities and interaction with collaborators . . .		Activities and interaction	
Hilton et al. (2013: 4)	The tasks performed by the actors are achieved by drawing upon their resources.	Resources	Drawing upon	Task performance
Löbler (2013: 422)	Whenever people act, they use operant resources along with operand resources. In so doing, they integrate resources.	Operant resources with operand resources	Use	
Edvardsson et al. (2014: 297)	Resource integration consists of cooperative and collaborative processes between actors, leading to experiential outcomes and outputs, as well as mutual behavioral outcomes for all actors involved.		Cooperative and collaborative	Experiential and behavioral
Peters et al. (2014: 254)	Resource integration is a continuing process consisting of a series of activities performed by an actor for the benefit of another party, which is conceptually aligned with service; that is, the application of specialized competencies (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself.	Specialized competencies (knowledge and skills)	Application through deeds, processes, and performance	Benefit of another entity or the entity itself
Cheung and McColl-Kennedy (2015: 486)	Customer resource integration is an active, dynamic process that requires social actors to work together to achieve a co-created outcome, drawing on tangible and intangible resources, such as skills and competencies, to co-create services of value.	Tangible and intangible resources, such as skills and competencies	Active, dynamic process Drawing on	Co-created outcome Co-created services of value
Frow et al. (2015: 464)	Resource integration involves a process of ongoing combination of resources by actors (resource integrators) in co-creating value.	Resources	Combining	Value co-creation
Laud et al. (2015: 510)	Resource integration refers to actors' interaction with and/or use of resources.	Resources	Interaction and use	
Skålén et al. (2015a: 251)	Resource integration refers to actors' efforts to combine and use resources to create intended value.	Resources	Effort to combine and use	Intended value
Anderson et al. (2016: 263)	The incorporation of an actor's resources into the processes of other actors.	Resources	Incorporation	

Author	Description	Key characteristics of description		
		Prerequisites	Activity	Outcome
Frow et al. (2016: 26)	Resource integration refers to efforts to interact with and use resources.	Resources	Efforts to interact and use	
Ng et al. (2016: 381)	Customer resource integration is customers employing resources, whether individually or collectively, to determine and enhance their own consumption experiences.	Resources	Employing	Determine and enhance their own consumption experiences
Peters (2016: 3006)	Where the resource interaction (defined as coming together of resources) results in either emergent or summative relations	Resources	Coming together	Emergent or summative relations
Plé (2016: 153)	Resource integration is a continuous process that involves different actions and activities performed by an actor […]. It requires a mix and combination of resources that result in contextualized configurations of those resources. The result of this combination then can be applied through interactions among entities to either create new resources or co-create value.	Combination of resources	Actions and activities performed	Create new resources or co-create value
Singaraju et al. (2016: 46)	Resource integration is defined as the incorporation of an actor's resources into the processes of other actors.	Resources	Incorporation	
Bruce et al. (2019: 182)*	Resource integration is a process consisting of activities to assemble, master, and optimize resources, to plan and fine-tune usage events in real time, and to reflect upon previous activities.		Assemble, master, optimize, plan, fine-tune usage, and reflect on previous activities	
Hollebeek et al. (2019: 6)*	Customer resource integration denotes a customer's incorporation, assimilation, and application of focal operant and/or operand resources into the process of other actors in brand-related utility optimization processes.	Focal operant and/or operand resources	Incorporation, assimilation, and application	Brand-related utility optimization

Source: Adapted from (Findsrud et al., 2018). Works marked * were added after the publication of the original article.

2.1.1 Actors as resource integrators

According to Vargo and Lusch (2016), the narrative and process underlying S-D logic manifest that actors are involved in resource integration and engaged in service for service exchange, all in the process of co-creating value. In another study, Vargo and Lusch (2011) redirected concentration from parties with pre-designated roles as producers and consumers to generic actors on the basis of the idea that all actors fundamentally do the same thing: integrate resources (Vargo and Lusch, 2016). "Actor" and "resource integrator" are used interchangeably in the literature, but I argue that there are conceptual distinctions between these concepts.

Actors are often defined as individuals or formal or informal organizations, such as firms, peer groups, families, or pressure groups (Edvardsson et al., 2014); they are regarded as a critical element in all businesses in the sense that neither resource integration nor service innovation can occur without actors. However, a recent study by Storbacka et al. (2016) elaborated on whether machines and technologies can be viewed as actors. The authors defined actors as humans and various collections of humans, machines, and technologies, including organizations. In my opinion, machines and technologies cannot be considered actors in isolation because all technologies need humans for production and programming at some level. Thus, machines and technologies result from humans integrating resources into new ones. Alternatively, Löbler (2013) discussed the notion of actors as operant or operand resources, wherein an actor becomes conceptually integrated into the idea of resources; accordingly, the need to distinguish between actors and resources disappears because, in this perspective, actors are resources. The problem with this view is that not all resources are actors.

From a wider ecosystem perspective (e.g., ecological research), a tree may be considered a resource integrator given that it uses sunlight, water, carbon dioxide, and nutrients from the soil, integrating resources to grow and produce oxygen. The tree has the operant resources necessary to combine the resources into new resources. The same can be argued about machines that can combine resources, create new ones, or change resources. Korkman et al. (2010: 236) contended that "practices are resource integrators" and that a practice-based approach can be categorized as an anti-individualistic stance. From my own standpoint, I view neither a tree nor a machine nor practices as actors. On the grounds of business and structuration theory, actors have agency (Kleinaltenkamp et al., 2012; Peters et al., 2014; Edvardsson et al., 2014). In this thesis, agency was treated as the ability of self-reflexive actors to act with choice (Archer, 2000). Human actors can make the conscious choice of whether to intentionally integrate resources (Bandura, 2001b). Jörling et al. (2019) argued that autonomous service robots are perceived as social actors because

of their physical embodiment and high level of agency, but the authors' reference to agency is in comparison to other robots, not humans. In the field of artificial intelligence, there are now robots that self-learn through algorithm-based machine learning, having the ability to learn from data and make predictions (Huang and Rust, 2018). These entities are arguably borderline actors. In this regard, a beneficial approach is for scholars to differentiate between actors and resource integrators through more precise language to ensure clarity. In this thesis, all actors were regarded as resource integrators (in line with the ninth fundamental premise of S-D logic), but not all resource integrators were considered actors. For instance, a tree or a service robot could be said to integrate resources but were, in this thesis, not considered as actors. Thus, using the label *resource integrators* entails a wider range than the narrower term *actors*, which denote a human, a group of humans, or a group of humans with access to resources (such as machines, technology, etc.) often in the form of an organization. Accordingly, actors exercise agency (Kleinaltenkamp et al., 2012; Edvardsson et al., 2014) and use operant resources (e.g., competencies) that act on operand resources in the resource integration process (Peters et al., 2014).

In service research, service provision implies the ongoing combination of resources through integration and their application, driven by operant resources—the activities of actors (Vargo and Lusch, 2011). The underlying assumption, therefore, is that *resource integration is driven by the activities of actors through their operant resources*. As several of the definitions in Table 3 emphasize, resource integration can be understood as collaboration or interaction between actors (e.g., Kleinaltenkamp et al., 2012; Edvardsson et al., 2014; Singaraju et al., 2016). This view was contradicted by Skålén et al. (2015a), who indicated that resource integration may be conducted by one actor in isolation from other actors when creating value-in-use, and by Löbler (2013), who reasoned that pure resource integration might be carried out by an individual, several people, or many people. The fact remains, however, that acquiring necessary resources requires some kind of exchange with others (Löbler, 2011) as no actor has all the resources needed to operate in complete isolation in every situation (Frow et al., 2014) or can sustain value creation independently (Chandler and Lusch, 2015). Thus, from an S-D logic perspective that does not limit the scope of analysis to a specific time and place but focuses on process, resources are always integrated in collaboration. Several scholars reasoned that actors drive resource integration (e.g., Vargo and Lusch, 2011), yet the necessity of actors does not negate the idea that their mere presence is insufficient for resource integration to occur. On this account, then, simply stating that an actor is a driver of resource integration is not viable. Comprehending what enables and drives actors and, by extension, resource integration necessitates further study of the prerequisites that constrain, guide, and give

energetic force to actors. In other words, we must ascertain what drives actors to integrate resources.

2.1.2 Prerequisites for resource integration

This section presents the prerequisites for resource integration, as identified in the resource integration literature, starting with what resources are integrated before proceeding to contexts where resource integration occurs.

2.1.2.1 Operant and operand resources

Resources can be classified as (1) *operand resources*, which must be acted on by some other resource to create an effect, and (2) *operant resources*, which can act on other resources to create an effect (Lusch and Vargo, 2014). Operant resources have been defined in S-D logic primarily as knowledge and skills (e.g., Vargo and Lusch, 2008a). A key assumption in S-D logic, fostered by Zimmermann (1951) and Pels et al. (2009), is that resources per se do not have value. A resource represents a carrier of capabilities, enabling an intended activity only when used (Peters et al., 2014). This perspective projects resources as possessing only potential value that is actualized through resource integration in the value co-creation process (Edvardsson et al., 2011; Díaz-Méndez and Gummesson, 2012), depending on how resources are integrated and operated on in specific contexts with specific intentions (Edvardsson et al., 2014). Koskela-Huotari and Vargo (2016) used *resourceness* as a label for resource usefulness for the accomplishment of something desirable, achieved through human appraisal and the transformation of potential resources into realized ones. It is an actor's other available potential resources (e.g., skills and knowledge) that determine the resourceness of potential resources (Lusch and Vargo, 2014). Because operand resources need operant resources for them to be utilized, resource integration, by definition, cannot occur without operant resources (see in table 3 definitions by Haase and Kleinaltenkamp, 2011; Löbler, 2013; Xie et al., 2008). Accordingly, an underlying assumption in S-D logic is that *operant resources are fundamental for resource integration and essential for value realization.*

One of the earliest publications within S-D logic that acknowledges resource integration as a separate concept is that of Lusch and Vargo (2006: 283), who described the resource integration function of firms and households as follows: "Organizations exist to integrate and transform micro-specialized competencies into complex services." The authors also initiated the idea of considering service provision on the grounds of resource integration. *Service* was, in the original article by Vargo and Lusch (2004: 2), defined as the application of specialized competencies (knowledge and skills), and the authors regarded knowledge and skills as operant resources. In S-

D logic, competencies (e.g., knowledge and skills) have been used somewhat interchangeably with operant resources and are frequently mentioned as a prerequisite of resource integration (Table 3). This focus may have resulted from these seminal early publications on S-D logic. Still, operant resources were not used in a fundamental premise until their 2008 article, "Service-dominant Logic: Continuing the Evolution," given the generally unfamiliar distinction between operand and operant resources (Vargo and Lusch, 2008a). The notion that operant resources are equivalent to knowledge and skills has thus persisted in the literature, engendering causal gaps in the logic of viewing operant resources as drivers of resource integration.

From my perspective, the literature is burdened with inaccurate uses of the labels "enabler" and "driver" with reference to attributes or prerequisites. I see these labels as linked to the conceptual theme of a construct consisting of a set of fundamental characteristics that are necessary and/or sufficient for something to be an exemplar of the construct (MacKenzie et al., 2011). Put differently, enablers are necessary and make something possible, whereas drivers are sufficient for something to occur. The former denotes something *can* happened, whereas the latter denotes something *will* happen if necessary enablers are present. The concept that operant resources are equivalent to competencies limits the value of operant resources as a construct and must therefore be conceptually extended to include all entities available to actors that enable the efficient and/or effective integration of resources (Madhavaram and Hunt, 2008). For instance, having the knowledge and skills to drive a car does not mean that an actor is always driving nor does having the competence to exercise automatically make an actor to adopt healthy habits. Using competencies implies agency-driven effort; that is, it is an actor's ability to act purposefully that drives resource integration. Actors with agency are not merely passive receivers of experiences on the basis of the internal mechanisms orchestrated by environmental events; they are active agents of their own experiences (Bandura, 2001b). As averred by Akaka et al. (2014), actors must judge the integration of particular resources will be valuable, leaving them better off than before, to choose to interact and coordinate action (Vargo et al., 2008). In correspondence, I argue (in line with Kleinaltenkamp et al., 2012; Peters et al., 2014) that actors have agency. Agency verifies the need to extend our understanding of what mechanisms influence actors' choices and increase their motivation to integrate resources for the purpose of conceptualizing resource integration.

2.1.2.2 Context in resource integration and a systems perspective

A considerable volume of the later S-D logic literature was heavily inspired by work (e.g., Scott, 1995; North, 1990; Thornton et al., 2012) on sociological and organizational concepts, such as institutions and institutional arrangements. Institutions and institutional arrangements (i.e., a set of institutions) help people make decisions despite limitations in cognitive abilities (Vargo and

Lusch, 2016), and humans efficiently rationalize through diffused and shared institutions (Vargo and Lusch, 2016). Institutions also comprise regulative, normative, and cultural–cognitive elements that, together with associated activities and resources, provide stability and meaning to social life (Scott, 1995; Koskela-Huotari and Vargo, 2016). In keeping with this definition, *institutions and institutional arrangements (i.e., a set of institutions) guide the direction of an actor's resource integration activities.*

Resource integration is described as a context-dependent construct because this phenomenon is made possible by the multidimensional and complex institutional context implied by service ecosystems (Koskela-Huotari and Vargo, 2016); it is also enabled by behaviors driven by self-interest as any non-legitimate behavior brings forth negative consequences (Edvardsson et al., 2014). Thus, actors generally act in accordance with norms and rules to avoid the negative consequences determined by a context and the suitability of a behavior within that context.

Resource integration is complex owing to its involvement of both individual and collaborative behaviors influenced by context and multiple systems on multiple levels within multiple value co-creation processes (Laud et al., 2015; Jaakkola and Hakanen, 2013). Changes in context may even drive service innovation given that actors adapt to and exploit such changes (Edvardsson et al., 2018). In line with this argument, *resource integration affects and is affected by contexts and service ecosystems.*

The choices available to actors on how to attain intended value-in-context may be limited by the resources available in a given context. Actors need to understand how to access one another's resources (Haase and Kleinaltenkamp, 2011) because "the usefulness of any particular potential resource from one source is moderated by the availability of other potential resources from the other sources" (Vargo and Lusch, 2011: 184). As indicated earlier, no actor has all the resources required to operate in isolation (Frow et al., 2014). The concept of resource-integrating actors highlights the idea of generic actors that have ownership of or access to resources (Storbacka et al., 2016), and the availability of resources impacts an actor's decision making regarding participation in an ecosystem (Frow et al., 2016). According to Grönroos and Voima (2013: 136), ". . . it is not resources per se, but the ability to access, deploy, exchange, and combine them that lies at the heart of value creation." To apply competencies and integrate resources, individuals need access to relevant resources, which they often acquire from the social relationships that they form within their broader social structures (Laud et al., 2015); the easier it is for actors to access platforms and resources therein, the richer the opportunity for resource integration (Lusch and Nambisan, 2015). As explained by Vargo and Akaka (2012), the primacy that S-D logic accords to operant resources in value co-creation also emphasizes the idea that although one has access to particular resources, solving a particular problem or creating a solution always requires

knowledge and skills. Hence, *resource integration is enabled by the accessibility of necessary resources in engaged actors' context.*

2.1.3 Resource integration activities

Peters et al. (2014) presented resource integration as an emergent process, that is, the interactive combination of resources generating a new resource with dispositional properties that differ from those found in the integrated resource (see also Smith, 2010). Knowledge of how resources can be combined and how they emerge to achieve an intended outcome influence the extent to which potential value is realized. Findsrud et al. (2018: Paper 2) found that explanations of resource integration often involve interactions with either resources (e.g., Laud et al., 2015) or other actors (e.g., Kleinaltenkamp et al., 2012). When driving a car, for example, a driver combines access to the car (operand resource) with knowledge on how to control and operate it (operant resource), know-how regarding the rules of driving, and knowledge of the meaning of signs and symbols, among other elements. Resource integration involves the activity of combining resources, and in doing so, an actor is using resources in a specific context to achieve a specific outcome at different levels of activation (Findsrud et al., 2018: Paper 2). Such an activation may vary from very active (e.g., driving a car) to very passive (e.g., a patient undergoing surgery) (Löbler, 2013; Findsrud et al., 2018: Paper 2). Furthermore, if other actors are viewed as resources (Löbler, 2013), then integration always occurs between an actor and resources. Hence, actors' *resource integration involves using available resources, including interacting with other actors.*

Resource integration is a performance construct whose purpose is to realize value from resources. In service exchange, actors must acquire the necessary degree of skills and knowledge for them to be effective and efficient resource integrators (Karpen et al., 2012) as they engage in activities that facilitate or create value (Hibbert et al., 2012). An actor's portfolio of competencies determines the effectiveness and efficiency with which the actor integrates resources and actualizes value given that a high operant resource density and the ability to capitalize on such density thereof affords actors increased potential to achieve desired outcomes (Karpen et al., 2012). Hibbert et al. (2012) defined resource integration effectiveness as the proficiency of actors in deploying resources as they engage in value-generating processes. High levels of competency thus enable an actor to achieve an outcome with minimal effort. Note, however, that this is a description of efficiency, often defined as performing in the best possible manner with the least

wastage of time and effort.[6] On this basis, then, Hibbert et al.'s definition is more suitable with regard to resource integration efficiency.

Although resource integration is a performative construct, research on the conceptualization of resource integration performance and the effectiveness and efficiency of actors' resource integration activities in a service setting is lacking. The works of Karpen et al. (2012) and Hibbert et al. (2012) indicated that resource integration effectiveness and efficiency bridge the gap between resource integration prerequisites and resource integration outcomes. Thus, *value realization is shaped by the effectiveness and efficiency of resource integration activities.*

With certain exceptions (e.g., Hibbert et al., 2012; Grönroos and Ojasalo, 2004; Karpen et al., 2012), the performative side of resource integration through effectiveness and efficiency represents a knowledge gap addressed by Findsrud and Tronvoll (Paper 3; see also Chapter 5.2.1).

2.1.4 Resource integration outcomes

The third key characteristic in describing resource integration is outcome. According to Findsrud et al. (2018: Paper 2), several definitions of resource integration include an outcome, such as value creation (e.g., Frow et al., 2015; Skålén et al., 2015a; Hibbert et al., 2012), benefits for another party (e.g., Peters et al., 2014), increased well-being (e.g., Grönroos and Ravald, 2011), the accomplishment of something desirable (e.g., Koskela-Huotari and Vargo, 2016), and the creation of experiential outcomes and outputs, as well as mutual behavioral outcomes for all actors involved (e.g., Edvardsson et al., 2014). S-D logic addresses both value creation processes and outcomes regarding value-in-use (Gummerus, 2013), which was, according to Vargo and Lusch (2016), later modified to value-in-context (Chandler and Vargo, 2011) and subsequently expanded to include value-in-social-context (Edvardsson et al., 2011).

Despite value creation and value co-creation being key concepts in marketing, "value is perhaps the most ill-defined and elusive concept in service marketing and management" (Grönroos and Voima, 2013: 134) and has seemingly had different meanings, depending on time, situation, or person (Holbrook, 2006). There is little consensus among marketing scholars on how value is created (Chandler and Vargo, 2011), but there is widespread agreement on the creation of superior customer value as key to a firm's long-term survival and growth (Terho et al., 2012). Value is uniquely and phenomenologically determined by beneficiaries (Vargo and Lusch, 2008a; Vargo

[6] For examples of definitions, see Table 9, Chapter 5.2.1.

and Lusch, 2016) and strongly socially influenced (Edvardsson et al., 2011). As clarified by Vargo and Lusch (2011), however, resources do not turn into value when used but are transformed into new resources that can be used.

The understanding of value in marketing has changed over the years:

> The nature of value has been discussed and debated since Aristotle. Part of its elusiveness stems from the oblique—if not orthogonal—meanings of value that have been embedded in the foundations of economics and the study of market exchange. (Vargo et al., 2008: 146)

A scholar who has written extensively about value is Holbrook, whose definition was the most frequently used in the publications included in the literature review (e.g., Heinonen et al., 2010; Payne et al., 2008). He defined *customer value* as an "interactive relativistic preference experience" (Holbrook, 2006: 212). The stronger the experience of a person, the more powerful the memory of the experience (Pelletier and Collier, 2018). Similarly, value may at different times occupy different levels of consciousness, namely, *phenomenal consciousness* and *access consciousness* (Ng and Smith (2012). "Phenomenal consciousness is the raw experience of movements, forms, sounds, sensations, emotions and feelings whilst access consciousness is perception, introspection, reflection, in a sense, a more heightened awareness of a phenomenon" (Ng and Smith, 2012: 18). It is the creation of value-in-context, and the raw experience of lived use experience from interacting with offerings (Ng and Smith, 2012). Access consciousness, conversely, is the perception of value that drives choice before resource integration and the valuation of outcome after resource integration (Ng and Smith, 2012). This definition indicates that resource integration outcomes are accorded both objectively and subjectively oriented valuations.

In this thesis, *value co-creation* represented the resource integration of multiple actors, who are often unaware of one another but that contribute to one another's well-being. This definition is an adaptation of Vargo and Lusch (2016: 8) description: "the actions of multiple actors, often unaware of each other, that contribute to each other's wellbeing." The word *action* was changed to *resource integration* because the latter encompasses activities that actors engage in; the adaption of the definition contributes to the clarification of resource integration in relation to value co-creation.

Edvardsson et al. (2011) emphasized the societal side of value and argued that S-D logic needs to focus on the fact that both service exchange and value co-creation are influenced by social forces. This emphasis expands value-in-context to value-in-social-context. As Smith (1776: 48) avowed,

> The things that have the greatest value in use have frequently little or no value in exchange; and, on the contrary, those that have the greatest value in exchange have frequently little or no value in use. Nothing is more useful than water: but it will purchase scarce anything; scarce anything can

> be had in exchange for it. A diamond, on the contrary, has scarce value in use; but a very great quantity of other goods may frequently be had in exchange for it.

Even though service value is uniquely and phenomenologically determined by beneficiaries (Vargo and Lusch, 2008a; Vargo and Lusch, 2016), businesses require value-in-exchange to survive. As explained by Schumpeter (1909), it is not the individual but society that sets a value in accordance with what someone is willing to pay.

Vargo and Lusch (2004) maintained that focus should be directed toward value-in-use instead of value-in-exchange. The perception of value as value-in-use for the customer means that concentration no longer falls on a customized bundle of products or services exchanged for a price; instead, value creation is viewed as an ongoing process that underlies a customer's experiences, logic, and ability to extract value from products and other resources used (value-in-use) (Grönroos and Voima, 2013). This idea was further discussed by Findsrud et al. (2018: 495, Paper 2) in regard to value as outcome:

> S-D logic does not directly address outcomes as a concept (Gummerus, 2013). However, Vargo and Lusch (2016) argue the service ecosystem levels of aggregation are analytical levels, which are inseparable of each other in practice. Similarly, value outcomes exist in the actor's perception and do not represent an ending point in the value co-creation process, but rather serve analytical purposes and represent perspectives of value related to levels of aggregation (e.g., micro, meso, and macro). Micro, meso, and macro generally within S-D logic refers to levels of aggregation ranging from an actor perspective (individual or a group of people as in a firm) through midrange structures (e.g., industry, market) and up to a societal perspective (Vargo and Lusch, 2016). However, the research question should determine the scope of analysis, and thus these assignments are somewhat arbitrary (Vargo and Lusch, 2016).

Accordingly, *actors' resource integration is always part of multiple value co-creation processes and is assessed from multiple levels of aggregation*.

2.2 Assumptions about resource integration and possible conceptual extensions

MacInnis (2011: 140) declared that conceptualization is a process of abstract thinking and understanding a situation or problem in an abstract manner by identifying patterns or connections and key underlying properties. As presented throughout the previous sections, several underlying assumptions (in italics) about resource integration in S-D logic outlined the conceptualization of resource integration. These are summarized in Table 4.

Table 4. Assumptions about resource integration from the S-D logic literature

1.	Operant resources are fundamental for resource integration and essential for value realization.
2.	Resource integration is driven by the activities of actors through their operant resources.
3.	Institutions and institutional arrangements (i.e., a set of institutions) guide the direction of an actor's resource integration activities.
4.	Resource integration affects and is affected by contexts and service ecosystems.
5.	Resource integration is affected by the accessibility of necessary resources in engaged actors' context.
6.	Resource integration involves using and interacting with resources, including other actors.
7.	Value realization is shaped by the effectiveness and efficiency of resource integration activities.
8.	Resource integration is always part of multiple value co-creation processes and is assessed from multiple levels of aggregation.

The eight assumptions conceptually define resource integration as input into the value co-creation processes of engaged actors and highlight the operation of interactive actors in a service ecosystem. In other words, resource integration is micro-level value creation activities in value co-creation processes, wherein the outcomes of resource integration activities may be assessed from a micro, meso, or macro perspective. Even though insights have been derived as to factors that influence the resource integration activities of actors (e.g., operant resources), the assumptions behind these activities have not theoretically clarified how these factors drive actors to integrate resources. Thus, the issues implicated in these assumptions need further development and refinement. Opportunities for extending conceptualization are addressed in the succeeding section.

2.2.1 Opportunities for extending the conceptualization of resource integration

As discussed previously in this chapter, several knowledge gaps in the literature serve as opportunities to augment the conceptualization of resource integration, which was the source of inspiration for each of the appended papers.

Practices represent routine ways of performing an activity and the sense-making frameworks that actors use in a particular context (Skålén et al., 2015b). In some cases, the outcome of resource integration triggers institutionalized change in resource integration practices, forming the basis for service innovation if such a change aggregates to a higher level. Ostrom et al. (2015) accentuated that identifying drivers of sustained service innovation is an important direction for future research. From the standpoint of S-D logic, innovation points to a new and better way for actors to co-create value through resource integration (Koskela-Huotari et al., 2016; Lusch and Nambisan, 2015; Vargo et al., 2015). This explanation was expanded by Edvardsson and Tronvoll

(2013: 26), who stated that "service innovation is not about resources as such; it is about actors using resources (including their knowledge and skills) in specific contexts." Skålén et al. (2015b) advocated the idea that the definition of innovation work on the basis of S-D logic must pay particular attention to resource integration and enhanced value propositions. In line with this argument, then, firms must design resource integration mechanisms that link resources, actors, and institutional arrangements and enable actors to enhance service innovation (Helkkula et al., 2018). Actors are guided by social values and institutional arrangements that shape how resources are to be understood, accessed, used, and integrated in achieving service innovation (Helkkula et al., 2018). Commensurate to such reasoning, Findsrud and Dehling (2019: Paper 1) conceptually explored the link between resource integration and service innovation, and Findsrud (Paper 4) delved into how service innovation emerges on the grounds of resource integration.

Value outcomes are important because they form the foundation for the development of value propositions (Skålén et al., 2015b), which are a source of motivation for actors (Sweeney et al., 2015). Nevertheless, few studies on resource integration have been devoted to motivation as a prerequisite for resource integration. The motivation and psychology literature can offer concepts, including motivation as a driver of activity, that are valuable in the conceptualization of resource integration. This possibility was the inspiration for the research of Findsrud et al. (2018: Paper 2).

Not all actors can equally unlock value from their resource integration activities (Hibbert et al., 2012), indicating that the activity of resource integration is a performative phenomenon wherein specific prerequisites determine the effectiveness and efficiency of resource integration and value actualization (Karpen et al., 2012). As mentioned previously, operant resources have been defined in S-D logic primarily as knowledge and skills (e.g., Vargo and Lusch, 2008a), but this conceptualization restricts the value of operant resources as a construct and must therefore be conceptually extended to include all available entities that enable efficient and/or effective resource integration by actors (Madhavaram and Hunt, 2008). A deeper understanding of the mechanisms that enable and drive for such efficiency and effectiveness offers an opportunity to expand the conceptualization of resource integration. Thus, the view of operand resources was extended by Findsrud et al. (2018: Paper 2), and the performative side of resource integration was explored by Findsrud and Tronvoll (Paper 3).

According to Ng et al. (2012: 215), "models of resource integration must define the dynamic and context-specific configurations of form, time, place and possession of resources that achieve the 'density' that is necessary for optimal value creation." In some resource integration cases, such as solving a math problem, there is a correct procedural approach that is independent of context. In dynamic and changing contexts, however, such procedures may be missing, rendering resource

integration progressively complex (Ng et al., 2012). The question that arises, hence, is how actors can adapt to changes in contexts and how the emergent nature of resource integration proffers a chance to augment resource integration, as addressed by Findsrud and Tronvoll (Paper 3).

Edvardsson and Tronvoll (2013) proclaimed that innovations often stem from actor-driven, novel, or improved ways of using existing resources to co-create value, new resources, or new technologies capable of creating services. Lusch and Nambisan (2015) contended that innovation occurs as actors seek enhanced density and methods of value co-creation. Understanding service innovation thus crucially depends on comprehending how actors drive innovation through operant resources (e.g., competencies and motivations); the sociological and psychological mechanisms that enable, guide, and stimulate actors to integrate resources in context; the system within which actors operate (e.g., accessibility); and the nature of how resource integration aggregates (e.g., emergent or additive). Stated another way, focus is directed toward actors' resource integration within a context that engenders service innovation. This was the main motivation for the work of Findsrud (Paper 4).

2.3 Service innovation

Service innovation is generally regarded as one of the key foundations of competitive advantage and an essential source of growth for companies in an increasingly service-oriented economy (Paswan et al., 2009; Carlborg et al., 2014; Kindström and Kowalkowski, 2014; Coutelle-Brillet et al., 2014; Helkkula et al., 2018). Indeed, the role of service innovation in creating well-being is increasingly acknowledged (den Hertog et al., 2010). S-D logic has begun to solidify and is ever more frequently used as a groundwork for understanding innovation in general (Barrett et al., 2015). Lusch and Nambisan (2015) suggested that S-D logic induces the exploration of value co-creation and service innovation through activities that underpin resource integration and implied actor roles.

The traditional literature on service innovation typically follows a goods-dominant (G-D) logic—which emphasizes product and process innovation (Lusch and Nambisan, 2015)—with the spotlight thrown on either a service offering or the service process (Ostrom et al., 2015). After a shift in perspective within service research from the inseparability, heterogeneity, intangibility, and perishability (IHIP) framework of the 1980s (Zeithaml et al., 1985; Edvardsson et al., 2005) to S-D logic (Vargo and Lusch, 2004; 2008a) 20 years later, three perspectives on service innovation emerged: assimilation, demarcation, and synthesis (Coombs and Miles, 2000; Witell et al., 2015).

"An assimilation perspective views service innovation as the introduction of new technology. A demarcation perspective views service innovation as an innovation in the service sector, while a synthesis perspective suggests that all innovations are service innovations" (Witell et al., 2015: 437). Research on service innovation has, in recent years, been extended through a synthesis view of innovation (Gallouj and Savona, 2009), which resonates well with S-D logic as it revolves around value co-creation through resource integration (Edvardsson and Tronvoll, 2013; Helkkula et al., 2018). Conventionally, the value of innovation is measured in terms of economic growth among developing firms (Witell et al., 2016), but from the perspective of S-D logic, both in service innovation research and resource integration research, value is created from the perspective of actors and determined by beneficiaries (Helkkula et al., 2018).

Key processes of service innovation are changing practices seeing as this phenomenon emerges and diffuses through novel and improved ways of resource integration (Lusch and Nambisan, 2015; Vargo et al., 2015). However, not all change represents innovation. As elaborated by Toivonen and Tuominen (2009), a Schumpeterian view of service innovation assumes that innovation (1) is carried into practice, (2) provides benefits to a developer, and (3) is reproducible. Similarly, the more firm-centric literature uses (1) influence on (economic) development, (2) repetition, (3) significant or radical change, and (4) intentionality as criteria for innovation (Fuglsang and Sørensen, 2011; Koskela-Huotari, 2018). However, Fuglsang and Sørensen (2011) questioned the relevance of innovations representing significant or radical change and being intentional given that in relation to services and public services, these criteria disregard the explorative, ongoing, and practice- and process-bound character of innovation. The extent of change required for it to be labeled an innovation has been a point of discussion in the innovation literature (Fuglsang and Sørensen, 2011; Witell et al., 2016). Change implies that something is new to someone, and defining service innovation as a *new service* is the most common interpretation of service innovation across assimilation, demarcation, or synthesis perspectives (Witell et al., 2016). We must bear in mind, however, that "new" is a relative concept (Toivonen and Tuominen, 2009). It can be understood as newness to an individual, a firm, or the world (Witell et al., 2015; Witell et al., 2016). In a Schumpeterian view, a new product, service, process, or idea represents only an invention until it is adopted by the market because inventions themselves have no inherent value (Witell et al., 2016). In line with this viewpoint, Gummesson (2014) posited that commercialization and the diffusion of inventions are more valuable to firms and societies than an initial invention; thus, inventions and innovations must be distinguished (Witell et al., 2016). Furthermore, newness is not limited to service, with innovation occurring in other elements of a business model, such as the service delivery process, customer interface, and value network as

well (Kindström and Kowalkowski, 2014). As Skålén et al. (2015b: 140) stated,

> The alternative view of the service innovation process is rooted in grounded studies using practice-based interpretations (Fuglsang and Sørensen, 2011), holding that service innovation processes are characterized by a low level of formalization and that they are emergent (Toivonen and Tuominen, 2009; Zomerdijk and Voss, 2011), unsystematic (Sundbo, 1997), conducted ad hoc as a solution to a particular problem posed by a given client (Gallouj and Weinstein, 1997), and integrated with day-to-day operations (Kelly and Storey, 2000).

Hence, service innovation does not need to be intentional (Fuglsang and Sørensen, 2011) but can be unintentional as it emerges through an interactive learning process initiated by any involved party (Carlborg et al., 2014; Gallouj and Savona, 2009). At one extreme, conscious, intentional, and planned innovation processes exist, and at the other is innovation that emerges by "accident" (Toivonen and Tuominen, 2009). As proclaimed by Kindström and Kowalkowski (2014), services are most often developed ad hoc rather than formulated in a planned new development process. Adding to this insight, Fuglsang and Sørensen (2011) argued that small daily adjustments in a product or service do not count as innovation. A change in resource integration practices may not need to be radical, either. This change must be enough to spread through a learning and institutionalization process and induce significant changes in organizational capabilities (Perks et al., 2012). In order words, change must aggregate to a higher level for it to evolve into an innovation (Fuglsang and Sørensen, 2011). In keeping with this explanation, then, innovations are reproducible (Toivonen and Tuominen, 2009; Snyder et al., 2016).

Early studies on service innovation considered new technology the primary force behind service innovation (Toivonen and Tuominen, 2009; Ordanini and Parasuraman, 2011). In reality, service innovation is impelled by customer demand for new services (Barrett et al., 2015; Storey et al., 2016) and the desire of service providers to create new services for existing markets or find new markets for existing services (Barrett et al., 2015). On these grounds, service innovation is actor-driven (Edvardsson and Tronvoll, 2013) through the use of knowledge and skills in the co-creation of phenomenologically determined value-in-context (Chandler and Vargo, 2011). To broaden the grasp of what drives service innovation, we must bring to the fore how and why actors engage in activities and behaviors that become service innovation. Resource integration enables us to understand what happens in practice during improvements to competitive advantages and learning processes (Findsrud and Dehling, 2019).

2.4 Summary of the theoretical framing

S-D logic and service research, in general, are informed by sociological research components, such as institutions and institutional arrangements, but service research can also benefit considerably from the inclusion of psychological mechanisms in analyses as these moderate social influences on actors' resource integration from a context. I adopted and adapted the previous statement by Edvardsson and Tronvoll (2013: 26) about service innovation and established resource integration as revolving around not resources as such but the use of resources (including knowledge and skills) by actors in specific contexts. Resource integration is a context-dependent construct that both influences and is influenced by dynamic contexts, and whether a novel way of integrating resources can be considered an innovation depends on context. For instance, using one technology may be regarded as innovative in one market but for years considered the norm in another. Thus, service innovation is a result of actors finding new and better ways of using resources (i.e., resource integration) that are adopted by other actors (i.e., aggregation to a higher level).

A psychological perspective on resource integration is manifested throughout this thesis. For example, motivation enables scholars to explain the impact of sociological constructs (e.g., institutions or structures) on resource integration. Motivation can also elucidate the human nature of an actor to seek novelty and challenge, extend and exercise his/her capabilities, explore, and learn (Ryan and Deci, 2000b). Service innovation and agility are therefore arguably innate in humans (Findsrud: Paper 4). The effectiveness and efficiency of resource integration extend conceptualization to the explanation and understanding of how actors have unequal capabilities in unlocking value from resources. By focusing on micro-level activities and mechanisms in value co-creation processes, this thesis expanded existing research on resource integration with key drivers and enablers, thereby illuminating how micro-level activities direct and shape resource integration processes, value co-creation, and service innovation.

"Why are you standing on your chair?," she asked. "Because I need to see my kappa from a new perspective."

– Rolf, in a desperate attempt to break free of writer's block during thesis writing

3 Research strategy and methodology

This chapter discusses the research strategy and methodology used in the thesis. First, I reflect on my ontological and epistemological perspectives as a researcher and then expound on the research methods used in the appended papers and the research contexts explored. Throughout the chapter, I also deliberate on the validity and reliability of the research process, concluding with a demonstration of the trustworthiness of the research.

3.1 Research philosophy and strategy

A paradigmatic foundation of research in service marketing includes three vital elements: ontology, epistemology, and methodology (Denzin and Lincoln, 2011; Tronvoll et al., 2011). In this section, I illustrate how ontological and epistemological assumptions informed the research strategies employed in the appended papers. *Ontology* refers to what reality is like and the basic elements that it contains (Silverman, 2017). *Epistemology* pertains to the nature and status of knowledge (Silverman, 2017) and inquires into how we know what we know (Tronvoll et al., 2011). *Methodology* refers to the principles of reasoning used when deciding on a research design (Silverman, 2017), which encompasses the epistemological assumptions implicit in specific methods and ways of looking at a phenomenon (Tronvoll et al., 2011).

My methodological stance as a researcher has been a journey during the development of this thesis. When I initiated my PhD study, I espoused an objective view of the world, as much as the research in marketing after the 1960s adopted quantification paralleled by philosophical justifications, drawing from positivistic research and theory development (Easton, 2002; Alvesson and Sköldberg, 2018). Throughout my PhD journey, however, my view has changed—or, one could say, it has been broadened and lifted. It is easy for a researcher to lose himself in all the "isms" found in the literature (see Table 5 for examples), and I have a difficult time allying myself with only one philosophy. I do not define myself as a true critical realist, positivist, social constructionist, or rationalist (see Alvesson and Sköldberg, 2018; Suddaby, 2014: for a description of different perspectives). In connection to this thesis, I might be best described as a mix of

elements from each of the aforementioned schools of thought. Similar to gears in the transmission of a car, each philosophy serves a purpose; sometimes, you need one gear/standpoint to get started, and as you proceed you need to switch gear/perspective accordingly. I am not a true positivist because I consider the observable superficial, and one may miss the unobservable mechanisms that produce phenomena (Alvesson and Sköldberg, 2018). However, in a complex world where we, as researchers, must make sacrifices, the positivistic approach has its place. In a perfect environment, there would be an "ism" that fits me and all my research perfectly. In the same world, there would be an ideal political party with which you agree constantly, and a "one-size-fits-all" item would actually fit all. Unfortunately, the world is more complicated than this. For instance, critical realism pursues the deeper-lying mechanisms described as a shift from events to mechanisms (Alvesson and Sköldberg, 2018). In this sense, critical realism corresponds with my focus on psychological mechanisms of resource integration. Yet, I do not agree with the critique toward methodological individualism that centers on the level of the actor.

Pragmatism accentuates the link between action and truth, suggesting that the absolute test of competence is the readiness to act on something (Brodie and Peters, 2020). A pragmatic view sees humans "as problem solvers whose thoughts guide action in the service of solving practical problems that arise in the course of life" (Gross, 2009: 366; Brodie and Peters, 2020: 420). It suggests that means and ends are not always given prior to action but often emerge from interaction that generates solutions which actors could not have imagined beforehand (Gross, 2009). Ontologically, Brodie and Peters (2020: 419) proposed a realist pragmatic approach to theorizing that emphasizes "the link between action and truth based on explanatory social causal mechanisms, informed by critical realist concerns regarding the nature of truth and its correspondence to reality and its evaluative (not just descriptive) nature." Thus, a pragmatic view is compatible with the aim of this thesis and the dynamic nature of resource integration.

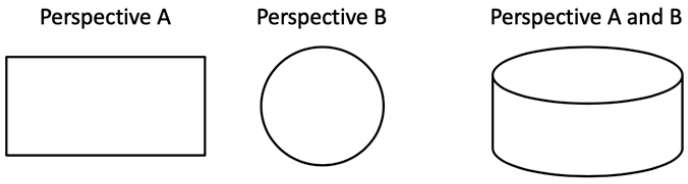
I believe that many of the mechanisms that guide our actions are socially constructed; in line with a rationalist perspective, I depended on the interpretation of "past masters," as identified through literature reviews (Suddaby, 2014). According to Alvesson and Sköldberg (2018), explanatory models usually distinguish between induction and deduction, with the former having its point of departure in empirical data and the latter in theory. Between the two lies abduction, which also begins with an empirical basis but does not reject theoretical preconceptions (Alvesson and Sköldberg, 2018). Alvesson and Sköldberg (2018: 5) suggested that "the analysis of the empirical fact(s) may very well be combined with, or preceded by, studies of previous theory in the literature, not as a mechanical application on single cases, but as a source of inspiration for the discovery of

patterns that bring understanding." Suddaby (2014) attested to the need to occasionally move from very abstract theorization to mid-range theories (referring to Pinder and Moore, 1980) or mechanisms (Davis and Marquis, 2005). I sought to understand the psychological mechanisms of resource integration, in effect combining the empirical and the theoretical. Theory offers a perceptual lens that structures sensory experience, and rationalists argue that, without theoretically derived categories, humans cannot cognitively organize or even recognize sensory experience (Suddaby, 2014). For rationalists, new theory is more likely to come from reading past masters through the analysis of published texts (i.e., literature reviews) than from empirical observation (Suddaby, 2014). New theory "is the effective union of induction and deduction, or empiricism and rationalism, that tends to produce new knowledge" (Suddaby, 2014: 408). In line with rationalism, the first two appended papers are conceptual in nature, relying on literature reviews. My research employed the abductive approach, through which I both collected qualitative data and, to a great extent, relied on literature reviews and conceptual thinking. Thus, I am contributing to theorizing on the basis of S-D logic by connecting the hypotheses that emerge and evolve through research to holistic efforts to develop a unified theory (Vargo and Lusch, 2017).

I wish to address two main points regarding my philosophy as a researcher. First, I strongly believe that there are no wrong and right perspectives, and second, one of the jobs of a researcher is to "connect the dots"—that is to make sense of separate pieces of information and connect them to broader theoretical perspectives and existing knowledge (Ellemers, 2013). Each of these points are discussed in turn. Figure 3 illustrates two individuals arguing about whether they see a six or a nine in examining a numeral. They are both right; discernment is simply a matter of perspective. I believe that researchers who limit themselves to one standpoint also restrict their understanding of phenomena. Let us deliberate on another example. Figure 4 depicts two different perspectives (A and B) of the same object. One shows a circle, and the other, a square. However, it is only when combining the two that a researcher can understand the nature of the object (a cylinder).

Figure 3. Challenge with differences in perspectives

Figure 4. Opportunity with differences in perspectives



According to Tronvoll et al. (2011), marketing and service research has been criticized for failing to embrace other paradigmatic approaches, thus the need for new perspectives or multidisciplinary approaches in this domain. In their study, Peters et al. (2014) addressed ontology and epistemology regarding resource integration and S-D logic. Three categories of Löbler's (2011) and Peters et al. (2014) typologies of ontological and epistemological perspectives are shown in Table 5. This categorization was built on the work of Tadajewski (2004) in the field of marketing and Burrell and Morgan (1979) in the field of organizational theory.

Peters et al. (2014) argued that an individual taking a positivist perspective understands resource integration as an emergent process and considers the concept from an object-oriented philosophy of science. The main assumption under this orientation is that resource integration outcomes represent (potentially) objective, observable, and measurable phenomena. Conversely, resource integration from a subject-oriented perspective is represented by a subjective experience, which may differ across individuals participating in specific resource-integration processes (Peters et al., 2014). S-D logic is built on the principles of service exchange and value co-creation, indicating that S-D logic is primarily understood intersubjectively (Löbler, 2011; Peters et al., 2014). My ontological position with respect to resource integration is both objective and subjective in the sense that the process can be viewed objectively as resources combined to create new resources; simultaneously, actors may have a subjective valuation of the new resources or the process itself. A pure pragmatic approach is limited by its focus on truth from mere consensus and the separation of values and facts, but linking a realist approach to pragmatism enables the review of theory to proceed from both evaluative (i.e., subjective) and factual (i.e., objective) points of view (Brodie and Peters, 2020).

Table 5. Typology of ontological and epistemological perspectives

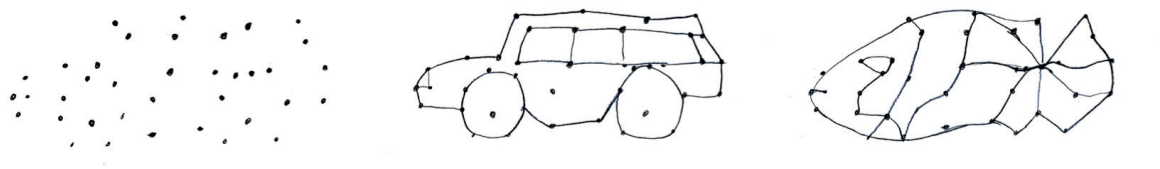
Theoretical assumptions	Object-oriented/objective	Subject-oriented/subjective	Intersubjectively oriented/intersubjective
Ontology	A reality independent of a researcher exists.	Reality is inseparable from a researcher's life experience.	Reality, if constructed via objectivation(al) discourses
Epistemology	Theories explain and describe objective reality.	Researchers interpret their experience with reality.	Researchers establish a common understanding.
Research object	Ontic reality	Perceptions and/or constructions	Symbols of common understanding/common understanding and coordination, objects as a result of objectivation
Representatives	Realism, positivism, early critical rationalism, empiricism	Constructivism, interpretivism, relativism	Social constructionism, conventionalism, paracritical rationalism

Source: Adapted from Löbler (2011) and Peters et al. (2014)

My epistemological orientation is related to the second point: One of the jobs of researchers is to "connect the dots" (Ellemers, 2013) by zooming out to see the big picture and develop theories. The process of theorizing requires researchers to connect concepts to "show how and/or why a phenomenon occurs" (Gioia and Pitre, 1990: 587; see also Peters et al., 2014: 252), but the world is a far too complex reality to perfectly explain. Accordingly, we need to simplify and make sense of information by zooming in or out, that is, move to another level of analysis (Yadav, 2010). The responsibility of researchers is to explain complex reality, balancing the need for simplicity with the need to minimize error (Gioia et al., 2013). Many data points are available to us, and our task as researchers is to make sense of these data points. Alvesson and Sköldberg (2018) posited that abduction, as an explanatory model, also has connections to a perspectival approach, referring to Hanson's (1958) conclusion that facts are always theory-laden and using ambiguous pictures as examples to demonstrate this idea. These pictures can be interpreted in two ways; for instance, they can be seen as a duck or as a rabbit, despite data on these images being identical (Alvesson and Sköldberg, 2018). Because researchers have different scientific backgrounds and perspectives, they may interpret data differently (see Figure 5, which shows how the same data can be interpreted as a car or a fish). My research philosophy is that researchers often study the same mechanisms but use disparate languages and lexicons. Knowledge is mostly linguistic (Easton,

2002), but communicating requires speaking the same language and infusing the same meaning into the words that we use. In this thesis, for instance, I used an interrelation approach to conceptualizing concepts and theorization (Yadav, 2010), drawing inspiration and combining knowledge from research fields such as business, psychology, innovation, entrepreneurship, and accounting. Moreover, breakthroughs in expanding the understanding and conceptualization of phenomena may emerge from the introduction of concepts and theories from other research fields into S-D logic. These tasks of comparing and differentiating theoretical perspectives and research fields quickly become linguistic in nature (see Table 7, Chapter 4.1.) and the result of underlying logics that dictate the sense-making of data points.

Figure 5. Making sense of the same data in varied ways



Epistemologically, Brodie and Peters (2020: 419) suggested the use of abductive reasoning as a philosophical foundation for theorization and "a way of exploring the nature of knowledge about service phenomena." As resource integration conceptually overlaps with service, an abductive approach should be most suited for theorize about resource integration. Moving back and forth between theory and empirical observations makes room for surprise, novelty, creativity, and innovation in the theory-building process (Brodie and Peters, 2020). Alvesson and Sköldberg (2018: 6) illustrated an abductive approach using the white swan example. An abductive researcher "would at first observe a swan with a certain color, and then show how, for example, the bird's genetic structure might generate a certain coloring. This underlying pattern then explains the individual case" (Alvesson and Sköldberg, 2018: 6).

Brodie and Peters (2020) averred that in situations where the phenomena being investigated are complex and multidimensional, a particular methodological approach alone is insufficient. The authors put forward the following argument:

> Building theory using methodological pluralism and drawing on abductive reasoning allows the exploration of the conceptual and empirical domains to take place iteratively, and in particular, it allows researchers to check emergent theoretical insights against (further) empirical data. It allows a focus on theory development as well as theory justification in services based on midrange theory that bridges theoretical and applied knowledge. (Brodie and Peters, 2020: 419)

As earlier described, this thesis was aimed at theorizing about a phenomenon (i.e., resource integration) in an empirical domain (i.e., dynamic contexts and service innovation), building on the works of past masters. Thus, the most accurate description of my ontological standpoint is that of a rationalist, realist, pragmatic approach, with literature reviews used as inspiration and actions and mechanisms studies subjectively as well as objectively. Further, I epistemologically adopted an abductive approach, which has been argued to be a very suitable approach to theorizing in service research (Brodie and Peters, 2020).

3.2 Research designs of the appended papers

What started as a quantitative thesis ended up as a purely qualitative work. The choice between quantitative and qualitative methods cannot be made without reference to a particular research problem and research object (Alvesson and Sköldberg, 2018). Qualitative studies are often best suited for endeavors to fathom social interactions and how people perceive things or respond to situations or understand processes, such as decision making (Silverman, 2017), as these include behavioral patterns of activities, interactions, experiences, processes, and relationships (Tronvoll et al., 2011). In short, "what" and "how" research questions are most suitable for qualitative research (Silverman, 2017). All my research questions start with "what," thus making a qualitative approach suitable. Qualitative research is also most commonly related to abductive approaches (Dubois and Gadde, 2002; Brodie and Peters, 2020).

Personally, I have always been interested in psychology and hold a continual, instinctive urge to dig deeper. It is therefore natural for me to home in on the micro rather than zooming out toward the macro. Most of the central research and development in S-D logic has been carried out on a metatheoretical level (Vargo and Lusch, 2017). All organizations are made up of individuals (Felin and Foss, 2005; Molina-Azorín, 2014). Methodological individualists argued that the collective is inherently composed of and the result of heterogeneous individuals. From an ontological perspective, individuals are acting entities that may make decisions (Felin and Foss, 2005; Molina-Azorín, 2014). Thus, individuals should be the basic unit of analysis (Molina-Azorín, 2014). I am interested in the mechanisms of resource integration and service innovation, and "mechanism-based theorizing can seek to *explain* but not *predict*" (Davis and Marquis, 2005: 336, italic in original).

It is important to understand both the theoretical and metatheoretical levels, in this case, S-D logic, and data from the real world (Vargo and Lusch, 2017). Theory cannot be comprehended

without empirical data and vice versa, and by going back and forth between domains, a researcher expands the "understanding of both theory and empirical phenomena" (Dubois and Gadde, 2002: 555). Thus, this thesis adopted a qualitative abductive approach, which involved theorizing from an empirical basis but first looking into previous theory in the literature as "a source of inspiration for the discovery of patterns that bring understanding" (Alvesson and Sköldberg, 2018: 5). This thesis built on two main sources of data. It collected data from the real world through interviews and used data from the academic and theoretical world through literature reviews. Theoretical concepts therefore functioned both as the input and output of the process (Dubois and Gadde, 2002). Some of the weaknesses of relying on the literature are that it can narrow analysis and restrict focus to specific parts of a dataset, whereas one strength is that it may also sharpen a researcher's awareness of subtle patterns in a dataset (Braun and Clarke, 2006). Implementing an abductive approach and relying on the interpretation of past masters (Suddaby, 2014) meant that the conceptualization of resource integration (Paper 2) and the link between resource integration and service innovation (Paper 1) were investigated on the basis of literature reviews[7] as the data, resulting in two conceptual papers. Conceptual papers are valuable in terms of their effectiveness as avenues for theory development in the discovery phase, and they are often cited frequently, thus demonstrating their importance in knowledge development (Yadav, 2010). Both conceptual Papers 1 and 2 document studies of relationships between well-accepted constructs in the context of discovery (Yadav, 2010). Areas in need of theorization are often identified from conceptual tensions and paradoxes, which is in line with the general epistemological approach of S-D logic (Vargo and Lusch, 2017; Koskela-Huotari, 2018). However, conceptual papers have an important limitation: They lack empirical evidence to support propositions; thus, data and analytical procedures are employed to establish plausibility in the context of justification (Yadav, 2010).

Papers 3 and 4 employed a theory-in-use approach, which is suited for research questions that are broad, deep, and lacking good answers (Zeithaml et al., 2020) and typified by a realist pragmatic perspective (Brodie and Peters, 2020). Both these papers were based on qualitative data, gathered mainly from interviews; data were also collected from online interviews and documentaries (Paper 3). Table 6 provides an overview of all the appended papers and the research design of the thesis.

[7] The election process is described in Chapter 3.2.1.

Table 6. Overview of research designs in the thesis and papers

	Paper 1	Paper 2	Paper 3	Paper 4
Type of paper	Conceptual book chapter	Conceptual article	Empirical qualitative	Empirical qualitative
Data collection	Literature review	Literature review	Interviews	Interviews
Research topics	Resource integration and service innovation	Motivation, resource integration	Resource integration performance, efficiency, effectiveness, instrumental outcomes, and experiential outcome	Service innovation, competencies, motivation
Empirical base	32 publications	57 articles on resource integration and a general review of the motivation literature	25 interviews in banking and financial services, 10 interviews with practitioners of BJJ	12 interviews of informants from four innovative companies

3.2.1 Literature review

An abductive approach starts with a journey through the existing literature, thus compelling a series of literature reviews for the current research and the appended papers. Most of the literature reviews, except for that on motivation, followed a very similar process, described as follows.

3.2.1.1 Service innovation

For Paper 1, the literature review on service innovation started with a search in 2017 in ISI Web of Science for publications with *service innovation* in the title, yielding 340 publications. We then refined the search to review publications, leaving a sample of 11 articles. Aside from the initial search, one was conducted over search engines (e.g., EBSCOhost, Google Scholar), and the reference lists of the identified articles (i.e., snowball sampling) were used to find other publications of importance. Finally, noteworthy publications were added to the sample, which amounted to 32 publications for review.

3.2.1.2 Resource integration

The review of the literature for Paper 2 on resource integration also involved consulting the ISI Web of Science database in 2017 for publications with the term *resource integration* in the titles, abstracts, or keywords. The eligible articles were those published from 2004 up to search date, resulting in 188 publications, after which the search journals were refined to encompass the business category. This step filtered the sample down to 57 publications. Because I applied an S-D logic perspective, only publications after 2004 were included. Other databases and search engines (e.g., EBSCOhost, Google Scholar) were also checked, and the reference lists of the

identified articles were reviewed to ensure no significant publications were missed. Finally, new resource integration studies published after our initial literature search were included in the sample.

3.2.1.3 Motivation literature

The motivation study (Findsrud et al., 2018: Paper 2) required an overview of the motivation literature, which was an enormous task because of the diversity and number of theories and studies available. In retrospect, the magnitude of the task might be one of the reasons motivation has not been clearly incorporated into scholarly forays involving S-D logic. This literature review was advanced using an informal approach that mostly relied on snowballing. I started with a search on Google using phrases such as *motivation theories* to find sites, books, articles, and book chapters, among other sources, to map motivation theories across research fields in the period 2016 to 2017. In this initial phase, the aim was to acquire an overview of motivation theories, their scientific origins, and core authors and references. This resulted in a list of 16 motivational theories to be further reviewed. Next, I explored ISI Web of Science and used search engines (e.g., EBSCOhost, Google Scholar) for important publications on each theory on the basis of citations and snowballing, endeavoring to find more seminal papers relevant to understanding motivation that could unravel useful insights into resource integration. Other theories that surfaced through the review were checked for relevance. The informal approach to the review process ensured a broad, comprehensive reach that satisfactorily fit the purpose of the review. I did not track the number of references reviewed, but I can certainly say that it was the most comprehensive review that I conducted for this thesis.

3.2.1.4 Performance, effectiveness, and efficiency

The literature review on performance for Paper 3 started in 2018 with a search run on ISI Web of Science for publications featuring the terms *performance*, *effectiveness*, and *efficiency* in the titles, abstracts, or keywords. The scope was refined to the business category, yielding 255 publications. The list was sorted on the basis of citation frequency to choose the top 20 articles. I also used other search engines (e.g., EBSCOhost, Google Scholar) and the reference lists of the identified articles (i.e., snowball sampling) to find seminal works and more recent publications that are important but might not have been cited as considerably. These added to the sample, generating a final count of 48 publications for review.

3.2.1.5 Value co-creation

Apart from reviewing the literature for the appended papers, I also conducted a review of the literature on value co-creation. Publications with the term configurations *value cocreation*, *value co*

creation, and *value co-creation* were searched in Web of Knowledge in 2015. The results were refined by defining business economics as a research area, resulting in 504 publications. To filter the most important, the publications were organized in accordance with number of citations. From the sorted list, I extracted the top 200 publications, from which 50 of the most-cited publications were chosen. Furthermore, the list of 200 publications was resorted on the grounds of number of citations in 2015 to select another top 50 articles, and finally, the 50 most frequently cited articles in 2014 were added into the mix. Many publications where present in two or more top 50 lists. Crosschecking all three top 50 lists revealed a list of 71 unique articles. Some other articles identified as often cited in the 71 articles were added, resulting in a final list of 75. The analysis began with a reading of all the 75 articles as well as simultaneously coding the content using NVivo and according to features or topics, such as value, value co-creation, roles, context, and activities. Later, the nodes were screened for similarities and/or differences.

3.2.2 Data collection and research contexts for Studies 3 and 4

In the initial phase of Study 3, the idea was to conduct a quantitative study of resource integration performance on the basis of the assumption that a rich literature on service performance and other performance literature exist and would therefore allow the creation of a measurement scale. Surprisingly, we could not find the robust and encompassing studies necessary to develop a measurement scale for service performance, despite such a measurement being accorded the highest importance among research priorities (Ostrom et al., 2015). For Studies 3 and 4, interviews were carried out as a source of real-world data, and these sessions were underlain by a discovery-oriented, theory-in-use approach (Tuli et al., 2007; Ulaga and Reinartz, 2011; Zeithaml et al., 2020). Theory-in-use approaches are especially suited for guiding later empirical efforts (Zeithaml et al., 2020)[8] and embrace the principles of pragmatism (Brodie and Peters, 2020). Eisenhardt and Graebner (2007) postulated that interviews are a highly efficient way to gather rich empirical data.

3.2.2.1 Interviews

On the basis of the literature reviews described in the previous section, an interview guide was created for Studies 3 and 4. Given the need to record the interviews, the research projects were registered with the Norwegian Centre for Research Data AS (NSD), which assessed the

[8] For an example, see Parasuraman A, Zeithaml VA, and Berry LL (1985) A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4): 41–50.

processing of personal data in the project as accordant with data protection legislation (Appendix 1). All the interviewees gave oral or written consent (Hammersley, 2014) (Appendix 2).

According to Eisenhardt and Graebner (2007), challenges arising from interview data can be best mitigated by using numerous, highly knowledgeable informants who view a focal phenomenon from diverse perspectives and actors from different hierarchical levels, functional areas, or groups to limit bias. Given that abduction is not logically necessary, Alvesson and Sköldberg (2018) recommended that it must be controlled against more cases to ensure validity and reliability. Thus, a multiple-context study was conducted, with focus placed on varied research contexts to enhance the conceptualization of resource integration. Informants were theoretically selected on basis of usefulness for replicating or extending theory by filling conceptual categories (Eisenhardt, 1989) and for their knowledgeability and willingness to share their know-how and experiences (Zeithaml et al., 2020). A theory-in-use approach relies on one-on-one conversations, where interviewees are seen as having their own theories, and such theories are extracted from a relatively small number of informants (Zeithaml et al., 2020).

The informants for Studies 3 and 4 were sampled theoretically and not for statistical reasons but across functions, hierarchal levels, or multiple contexts (Tuli et al., 2007; Eisenhardt, 1989). This ensured variety in informant composition, while maintaining shared characteristics among informants allowed comparability (Ulaga and Reinartz, 2011). We also used three specific recommendations of Wallendorf and Belk (1989) in the interview process. First, the interview started with a broad and easy question, with the interviewees asked to talk superficially about themselves, for instance, by describing their backgrounds and roles in their respective companies or how they started training for Brazilian Jiu Jitsu (BJJ) (Appendix 3). Second, in some of the interviews, we performed self-revelation by sharing personal information to make the informants relaxed, defuse the situation, and enable a better connection between researcher and informant. Finally, in some of the interviews, we reframed a given question in another way or repeated an answer to an informant using alternative words to gain more in-depth information. Probing questions were also raised about issues that emerged throughout the interviews.

3.2.2.2 Research context for Study 3

The research context for Study 3 comprised banking and financial services and BJJ. The first was chosen as a research context for three reasons. (1) Banking and financial services play a core role in modern society as they enable the indirect exchange of services facilitated by money as a common medium of exchange (Lusch and Vargo, 2014). The importance of the industry became evident in the financial crisis of 2007 to 2009. A report of the US Financial Crisis Inquiry

Commission (2011) stated that the crisis was caused by widespread failures in financial regulation. As one of the informants in Study 3 stated, "every modern society needs a well-functioning banking and payments system, it is hard to barter in 2019, so having a well-functioning payment system and financial system that actually work is critical for societies today." (2) Banking and financial services is also a traditional industry but is currently experiencing fast, significant development in respect of digitalization and the fundamental manner by which the industry operates (e.g., a shift from online banking to mobile banking). Finally, (3) banking and financial services are measurable through monetary value.

For Study 3, we interviewed 25 informants working within banking and financial services (eight females and 17 males) and having experience levels ranging from three to 42 years (an average of 18 years). We also interviewed 10 informants practicing BJJ (one female and nine males) with experience levels ranging from three to 16 years (an average of nine years). A theory-in-use approach, wherein informants are expected to espouse theories of how something works, implies that informants have a certain amount of experience to have developed their theoretical ideas and beliefs. Thus, we set a criterion of a minimum of two years' experience in banking and financial services and a blue belt ranking in BJJ.[9] All the informants had a minimum of three years of experience. Their ages were not reported as years of experience was expected to be a better measure of their ability to provide useful insights. Nevertheless, we made sure that all the informants were above 18 years old and could therefore legally give consent as to the audio-recording of their sessions. The informants were recruited through contacting the companies in which informants were internally recruited, or through snowballing, wherein the informants were asked whether they could refer a suitable informant for the project.

The interviews showed that there was generally a huge distinction in competencies between a financial advisor and the average private customer. Furthermore, despite the industry undergoing a digitalization process, there are industry guidelines that lay out best practices for solving customer challenges reflecting the relative predictability of the banking and financial services context. To obtain a detailed picture of performance, therefore, we sought a second more dynamic context where actors are more equal in competence level and an easily measurable outcome for ranking performance exists. Competitive games (e.g., chess, e-sports) and competitive sports (martial arts, Olympic wrestling, fencing, tennis, etc.) fulfilled these criteria and were considered for inclusion in the study. We quickly ruled out team-based sports because of the complexity that

[9] Accomplishing a blue belt typically requires between two and three years of active training.

including these would entail, and emphasis on actors as individuals in the thesis. S-D logic maintains that operant resources are central to competitive advantage (Vargo and Lusch, 2016; Vargo and Lusch, 2008a). Accordingly, the search for a research context accorded prominence to an activity's technical difficulty, dynamic nature, and knowledge and skills requirement. We chose BJJ as the second setting. BJJ is a martial art and competitive sport involving taking one's opponent to the ground, achieving positional control via continuous grappling, and applying submission holds using joint locks and chokeholds until the opponent surrenders (Diaz-Lara et al., 2015). Today, BJJ is considered one of the world's fastest-growing martial arts and is often referred to as a game of human chess (Hogeveen, 2013). It has two characteristics that made it a very suitable context for probing into resource integration, especially resource integration performance. The first is the uniqueness in the way BJJ is practiced and its dynamic nature. The sport is safe to practice at high intensity, with the individual better at integrating resources (i.e., strength, technique, speed, cunningness, guile, size, effort) winning a match. The fact that one person gives up (referred to as *tapping out*) leaves no ambiguity as to who wins and loses. This feature renders the activity objectively measurable, and practitioners are used to operating at the limit of their abilities. The second attribute is the fact that BJJ is about solving problems in an environment of constantly changing challenges, offering us insight into a fast-paced, dynamic context that requires constant adaptation. World-renowned BJJ coach John Danaher explained this phenomenon in the following way:

> For an individual, the greatest gift that I think they get from Jiu Jitsu is the idea to solve problems under stress. Every second of every match you are ever involved in Jiu Jitsu is an attempt to solve a problem that my opponent is presenting to me, but it is a problem unlike any other. If I give you a simple mathematics problem, 742 divided by 13, that is a static problem. I give you pen and paper, you go through the various steps, and you come up to an answer. However, in Jiu Jitsu, the problems are not static; they are dynamic. Worse than that, not only are they dynamic, I'm dealing with a cognizant, thinking opponent which is trying to defeat everything I'm trying to do to them. So, with each second, the problem changes. As I try to solve problem A, the opponent is already switching to problem B, and then C, D, and all the way through. [...] Not only am I asked to solve problems, you must solve them in a faster rate than my opponent is solving my problems. And in this sense, it is one of the trickiest problems you will come across. (EatFilms, 2015)

Banking and financial services is a conventional research context, where interaction among actors (i.e., financial advisor and customer) is relatively predictable. By contrast, BJJ offers an unconventional research setting characterized by a highly dynamic interface among actors (i.e., two competitors). The combination of these contexts contributes to the provision of a broader and deeper perspective on resource integration performance and positively affects the possibility of formulating a general, context-independent framework for such performance. However, choosing two very different settings is also have its challenges. For instance, the likelihood of

findings occurring in both contexts or identifying similarities between them is lower than that possible in more similar contexts.

3.2.2.3 Research context for Study 4

The context of Study 4 consisted of companies that were considered innovative or were working on innovative projects in their respective industries. Informants were sampled from companies of varying sizes and service foci, including both pure service companies and manufacturing corporations that undergo a servitization process, and with a range of employees and turnover rates (10−540 employees, €1−€100 million per year). The informant recruitment relied solely on contacting four case companies and involving them in the project. One person within management was instructed to recruit informants internally in a company. Among the four case companies, two (one large, one small) operate in service industries, and the remaining ones (one large, one small) are manufacturing companies that have undergone servitization.

To develop an in-depth understanding of resource integration and the enablers and drivers of service innovation, the informants chosen occupied different positions (e.g., CEOs, executive board members, production managers, R&D managers, and programmers) and having different levels of knowledge and experience. The informants exhibited various degrees of abstraction and focus in their answers. For instance, some of them (e.g., programmer and production planner) were very specific in relating answers to a specific project, whereas others (e.g., board member and CEO) were more abstract and exhibited more strategic and long-term thinking. Although generally the same interview guide (Appendix 4) was used, the interviews differed in terms of probing questions as these were adapted to each informant in accordance with level of abstraction, strategic or practical focus, knowledge, and experience (Sklyar et al., 2019). The four companies operate in three different industries. The first offers financial services and is working with robotization to improve the efficiency and effectiveness of its services. The second develops and manufactures products for the construction industry. The third and fourth companies operate in the communication industry, with one being a service provider and the other a printing house.

3.3 Trustworthiness of the research project

Show me a researcher who claims to have error-free research, and I will show you a researcher that is untrustworthy; there is no such thing as error-free research (Sechrest and Sidani, 1995). It is important to remember, however, that research is about getting as close to true knowledge as possible with a minimal amount of error while balancing optimal trustworthiness against the

rational use of resources (e.g., time, money, and people). Throughout the research process, there will always be incidents where trustworthiness must be sacrificed to some extent in the name of practicality. Researchers should thus be conscious about their choices and be critical of their findings and interpretations. Qualitative research has historically had a somewhat negative reputation, with researchers claimed to engage in creative theorization on the basis of flimsy evidence (Gioia et al., 2013). By critically questioning my own research and maintaining awareness of my own fundamental assumptions and biases, I could pursue the research quality needed for my endeavor to be trustworthy. In collaboration with co-authors, I always strived for rigorous research and process documentation throughout the thesis and the work documented in the four papers. All the interviews were recorded, and the raw data are available for checking. At the end of the project, all recordings will be deleted following guidelines on handling personal information, but transcripts of the interviews will be available. The trustworthiness and quality of interpretive, qualitative research is evaluated using a wide range of criteria (Zeithaml et al., 2020), among which the most frequently adopted are credibility, transferability, dependability, and confirmability (Guba and Lincoln, 1982).

Credibility relates to how true and accurate findings are and the confidence that others hold with respect to your analysis of the reality that informants experience (Guba and Lincoln, 1982). Reality can be described in many ways, and a researcher's interpretation of informants' descriptions must be convincing. During interviews, we often summarize what a respondent says using our own "research vocabulary" and ask whether the informant agrees or identifies with our understanding (Guba and Lincoln, 1982). All the interviews in my studies for this thesis were conducted in locations regarded as natural for the informants, who were also thoroughly educated about confidentiality and anonymity to increase the likelihood that they will speak freely and truthfully (Shenton, 2004). A theory-in-use approach foregrounds interviewees' theories, which researchers can uncover and extend using other sources of insight (Zeithaml et al., 2020). For Study 3, therefore, we also checked secondary sources of data in relation to BJJ; these sources included online interviews, documentaries, and discussion forums, which served to confirm the initial findings derived from the informants. I am the sole author of Paper 4; hence, its credibility requires elaboration. The research was also based solely on interviews, rendering data triangulation impossible. In an optimal situation, observing the meetings and workshops of case companies that were working on an innovative project and/or accessing meeting protocols or other written documents would have increased the creditability of the study. However, limitations in time and accessibility precluded the inclusion of secondary data—an aspect that diminishes the credibility of Paper 4. This shortcoming was addressed by sampling different informants theoretically to

obtain a wide range of informants (Shenton, 2004). To mitigate the disadvantage stemming from being the sole author of the paper, I sought peer scrutiny, discussing findings and receiving feedback from supervisors during different stages of the research (Guba and Lincoln, 1982; Shenton, 2004).

Transferability refers to the generalizability or extent to which constructs and propositions are applicable to contexts not included in the data used to develop a theory (Zeithaml et al., 2020). A limitation in the generalizability of qualitative research lies in the relatively small number of informants recruited for this purpose. However, theoretical sampling and using multiple cases should enhance the transferability of research (Eisenhardt and Graebner, 2007). For both Studies 3 and 4, informants from various contexts were theoretically sampled. The considerable difference in contexts in Study 3 adds to the transferability of the research. Given that the framework that emerged from the data were applicable to both banking and financial services and BJJ, the possibility of its transferability to other settings also increases. All the research contexts are richly described in this thesis and the appended papers, thereby enabling for judgement of the transferability of the findings (Guba and Lincoln, 1982). Study 4 had only 12 informants, and it would have been preferable to interview more informants from distinct environments to strengthen transferability (Shenton, 2004). Theory-in-use studies typically have small samples (Zeithaml et al., 2020), but 12 is minimal considering the broad aim of the research. However, it is questionable whether "producing truly transferable results from a single study is a realistic aim or whether it disregards the importance of context which forms such a key factor in qualitative research" (Shenton, 2004: 71). In accordance with the aim of this thesis, Study 4 prioritized the possibility of acquiring useful insights at the cost of transferability, and future research should thus seek to strengthen the transferability of the findings.

Dependability is analogous to *reliability* and refers to the extent to which multiple researchers find the same results (Zeithaml et al., 2020). The thematic approach of data analysis in Studies 3 and 4 has its strengths in flexibility, but it is deficient as regards the lack of a set approach to the analysis process (Braun and Clarke, 2006). A study should be repeatable under the same circumstances in another place and time (Guba and Lincoln, 1982). Analysis seeks to find repeated patterns across a dataset (Braun and Clarke, 2006), but because different researchers may focus on varying patterns, the reliability of findings may weaken. Reliability is strengthened by documenting all the steps in a research project—a task done throughout this chapter and the appended papers (Guba and Lincoln, 1982). Furthermore, all the interview transcripts and earlier drafts of the papers are available, thus allowing the auditing of the work (Guba and Lincoln, 1982). "Reliability is a matter of replicability" (Guba and Lincoln, 1982: 247) and replicability is a

complicated issue in connection to qualitative research compared with quantitative research (e.g., surveys). Concerning a systematic literature review and an analysis of interview transcripts, replications are possible owing to the descriptions provided in the appended papers, this chapter, and interview transcripts available for auditing. However, replicating semi-structured interviews is borderline impossible as interviews evolve differently under various thought processes. Correspondingly, this study has limitations in dependability because of its use of semi-structured interviews.

Conformability, or *objectivity* in quantitative research, pertains to whether results can be confirmed as emerging from data (Zeithaml et al., 2020). One challenge as a researcher is to ensure that findings convey the ideas and experiences of informants rather than one's own characteristics or perspectives (Shenton, 2004). Implementing an abductive approach, where I analyzed the data with the help of theoretical preconceptions and relying on the interpretations of past masters through literature reviews (Suddaby, 2014), meant that I constantly developed and elaborated on theories throughout the research process (Alvesson and Sköldberg, 2018). Some of my assumptions were supported, but often, they were too limited or even wrong. In abductive approaches, these surprises represent a move backwards that enables the establishment of a plausible theory (Brodie and Peters, 2020). A case in point is Study 4, wherein I had the assumption that the manner by which actors devise ideas is most important. This supposition was negated by the findings, indicating that it was not how the ideas are formed that was the limiting factor but doing something with them. Reflection over our own assumptions and biases when coding data supports the confirmability of data. In Studies 3 and 4, first-order categories were presented using informant vocabulary, and second-order analysis was conducted using researcher vocabulary, thereby ensuring quality in the qualitative research (Gioia et al., 2013).

By moving back and forth between data and theory (i.e., the abductive approach), we can increase the likelihood of rigorous research. Nevertheless, adopting abductive theory development can increase the "distance" between data and theory. Studies 3 and 4, for instance, relied on thematic analysis, wherein first-order categories were as close to the interviewees' lexicons as possible, whereas aggregated themes were theoretical concepts taken from the literature. This situation can appear as a "chicken or egg" question, in which whether the theory emerged from the data or whether data was coded in a way that fits the theory is unclear. In line with an abductive approach, I went back and forth between the data and theory during the analysis. That is to say, I coded first-order and second-order categories on the basis of theoretical preconceptions, and with a surprising insight as anchor, I went back to the theory before recoding the categories. This process was repeated, resulting in coding structures that linked the empirical and theoretical domains.

Throughout this thesis, I have kept reflexive notes, and all the work has been presented at assorted stages in conferences and PhD seminars and reviewed by other scholars at numerous occasions over the past four years.

To conclude the trustworthiness of the research, I used qualitative, abductive, and thematic analytical approaches as methods of collecting and analyzing the data. In correspondence with the broad aim of the thesis, these methods offered high flexibility and the possibility of acquiring useful insights in connection to theorizing about resource integration, which has received relatively little research attention and represents a "black box" in S-D logic. Nevertheless, the benefits of these methods come at a cost to the trustworthiness of the findings. Future research should thus seek to empirically validate the results of the appended papers and the overall framework put forward in this thesis.[10]

[10] This issue is further discussed in Chapter 6: Limitations and Future Research.

Efficiency is intelligent laziness.

– Anonymous

4 Findings and contributions of the appended papers

This chapter summarizes the findings and contributions of the four appended papers. The first study established a theoretical link between resource integration and service innovation. The second centered on the drivers and enablers of resource integration, thus contributing to answering the first RQ pursued in the thesis. The third study was targeted toward resource integration activities, thereby illuminating RQ2. The fourth study clarified RQ3 on the basis of the foundation laid out in the first research.

4.1 Paper 1—Resource integration processes as a microfoundation for service innovation

The first paper was co-authored with PhD student Sebastian Dehling and is published as a book chapter in *Service Innovation for Sustainable Business: Stimulating, Realizing, and Capturing the Value from Service Innovation*. We both contributed equally to the ideation, literature review, and writing. The project theoretically contributes to the service innovation literature through its use of resource integration as a theoretical framework for understanding individual actors' resource integration behaviors within practices, the development of practices through resource integration, and the role of actors in changing practices over time.

Theoretical microfoundations enable us to understand how higher-level factors, such as service innovation, originate from individual-level determinants. Resource integration represents the use of competencies through individual actions and interactions, and through this lens, we can better explain how resource integration and the interaction of actors engender emergent and collective service innovation and how relationships between macro variables are mediated by resource integration actions and interactions (see Hollebeek et al., 2019; Felin et al., 2015). In Study 1, zooming in on resource integration as the key driver of service innovation at the micro level cleared the way for us to seek insights into the mechanisms that shape the process of service innovation. Accordingly, resource integration enhanced our understanding of what happens in

practice when actors apply their knowledge and skills to improve their competitive advantage and engage in learning processes. The purpose of Study 1 was to establish resource integration as a microfoundation of service innovation by integrating and relating the characteristics and lexicons of the microfoundation literature, resource integration literature, and service innovation literature (MacInnis, 2011; Vargo and Lusch, 2016) (Table 7).

The additive and emergent path of resource integration as a source of service innovation might suggest different outcomes. Conditions designed to facilitate emergent resource integration possibly lead to more radical service innovation, whereas additive resource integration may evolve into more incremental resource integration. These insights pose clear managerial implications for organizations that seek service innovation. As argued previously in this chapter, practices emerge from the activities and interactions of actors, and service innovation occurs when changes in practices aggregate through learning processes in an organization. For these reasons, managers should focus not on creating practices but on fostering learning environments where practices can emerge. This suggests that a bottom–up approach more effectively facilitates the emergence of service innovation than does a top–down approach. Managers can also try to establish innovation environments aimed at explicitly facilitating additive or emergent resource integration paths for various desired outcomes. One challenge confronting managers in the matter of emergent service innovation is that this process may be difficult to replicate or reproduce, and in these instances, it can arguably be considered to not fulfill all requirements of an innovation from a Schumpeterian view (Toivonen and Tuominen, 2009). Accentuating resource integration helps researchers and managers understand where service innovation originates and how it aggregates and must therefore receive careful consideration when theorizing about service innovation.

Table 7. Principles of resource integration and microfoundations regarding service innovation

	Microfoundations	Resource integration	Service innovation
		Micro	Macro
Actor and collaboration	Individuals are independent of each other, with their own preferences and interests.	Actors have agency (Kleinaltenkamp et al. 2012), have individual sets of knowledge and skills, and are driven by motivation. Actors have subjective experiences, as value is phenomenological determined by the beneficiary. Actors increase their knowledge and skills through resource integration.	The prime movers of organizational competencies are the individual actors (Nonaka, 1994). Innovation is something which provides benefit to its developer. Service innovation cannot occur without learning.
	The behavior of individuals is within structures.	Actors are guided by institutional arrangements.	Innovation in service ecosystems entails reconfiguring the institutional structure by changing the institutionalized rules of resource integration (Koskela-Huotari et al., 2016)
	Microlevels may focus on the individual or the collaborative.	The pure act of resource integration may be carried out by a single actor or in collaboration (Löbler, 2013).	Discovering better practices may come from individual or collaborative use of resources. Innovations are the outcomes of behaviors and interactions between individuals and organizations (Perks et al., 2012)
Aggregation	Microfoundations cannot be without aggregation.	The purpose of resource integration is to co-create value at various levels of aggregation (Vargo and Lusch, 2016).	Service innovation is change at a higher level of aggregation. Service innovation is a process of breaking, making, and maintaining institutionalized rules of resource integration (Koskela-Huotari et al., 2016).
	Choices and interactions create structure and shape the evolution of structures over time.	Value outcomes from resource integration (may) lead to or change practices (Kleinaltenkamp et al., 2012)	Innovation is something carried out in practice. Innovation is something that is reproducible.
	Aggregation from microfoundations may be additive or emergent.	Resource integration may be homopathic or heteropathic (Peters et al., 2016).	Individuals influence each other, and their interaction may lead to aggregate outcomes that can be unforeseen, surprising, and emergent.

Source: Findsrud and Dehling (2019: Paper 1)

4.2 Paper 2—Motivation: The missing driver for theorizing about resource integration

The second paper, published in *Marketing Theory*, was co-authored with Professors Bård Tronvoll and Bo Edvardsson. The purpose of the research was to use motivation theories to further explain what drives resource integration. The idea for the study came from my initial literature review on value co-creation. While reading the literature, I often found myself asking why actors integrate resources. The literature did not provide a sufficient answer, so Study 2 was initiated to conceptualize resource integration and the motivation of actors to integrate resources (e.g., Kleinaltenkamp et al., 2012; Peters et al., 2014), as well as the performative prerequisites of actors' efforts during resource integration for value co-creation (Edvardsson et al., 2014). We posited that motivation is key to understanding actors' willingness to integrate resources and fundamental to why they engage in this practice. We also showed how resource integration reflects micro-level activities in value co-creation processes and how motivation theories provide vital insight into the drivers of resource integration. As the first author of the paper, I was assigned the primary responsibility of developing the conceptual framework and linking motivation research to resource integration. As the paper was developed, Professors Tronvoll and Edvardsson acted as reviewing co-authors, providing invaluable critiques, recommendations, and contributions to the development of the conceptual framework and positioning of the paper. They also carried out editing.

As shown in the theoretical background, much of the existing literature, especially that on S-D logic, revolved around the sociological mechanisms that drive resource integration, such as institutions and institutional arrangements. We thus switched focus to the psychological mechanisms that moderate social influences from contexts on actors' resource integration. Motivation enables scholars to explain the effects of sociological constructs (e.g., institutions or structures) on resource integration. The principal arguments in the paper can be summarized via four propositions and a definition of resource integration:

Proposition 1

Resource integration is performed by actors, enabled by competencies, and driven by motivation and institutional arrangements.

Proposition 2

Actor's motivation shapes the direction, intensity, and persistence of resource integration.

Proposition 3

Actors' subjective and shared experiences of resource integration influence their motivation and competencies.

Proposition 4

Value propositions offer actors' motivational direction toward intended value outcomes.

Definition

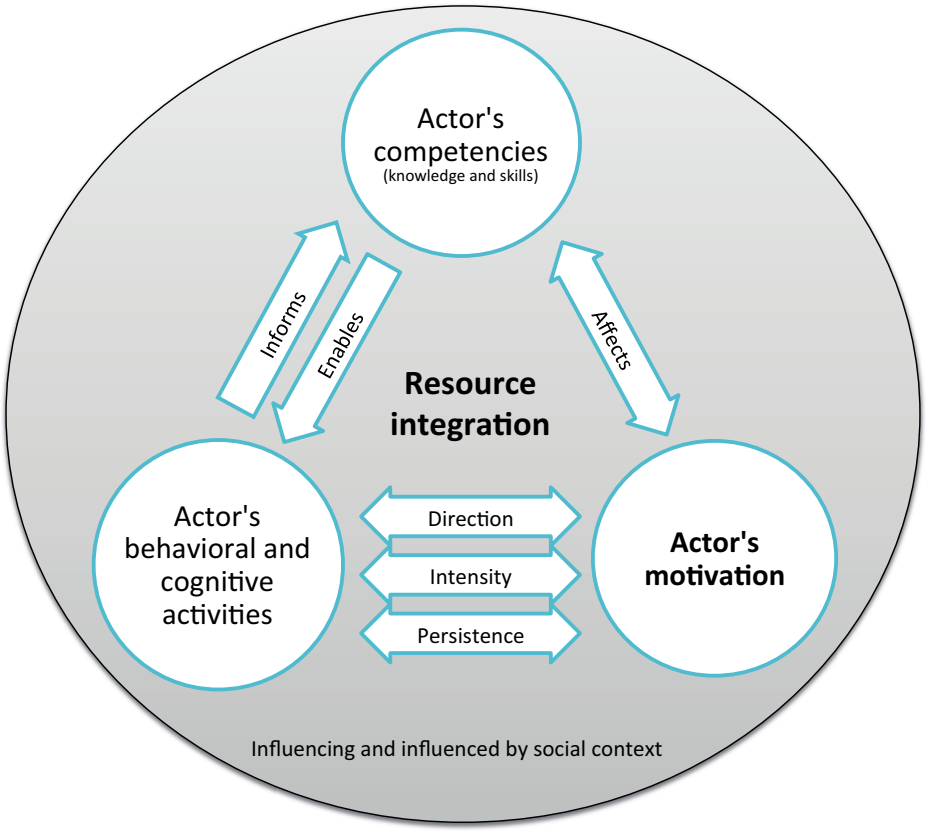
Resource integration is defined as actors' use of competence in emerging interactions, driven by motivation and enabled by available resources.

Delving into motivation theories uncovered three important insights and concepts worth highlighting. The first contribution worth highlighting relates to the first proposition and shows the importance of extending operant resources to include drivers. The direction, intensity, and persistence of energy for integrating resources was an important element in the research and was also adopted in later publications (see Razmdoost et al., 2019). The research found that resource integration is performative and that actors are unlikely to realize equal value from the same set of resources. Moreover, level of competency and motivation function as prerequisites for integrating resources efficiently and effectively. The study explained how institutions affect actors, are filtered by actors, and by extension, are manifested in resource integration activities. Institutions represent "rules" of resource integration and coordinate actors' efforts, and shared institutional arrangements guide resource integration (Koskela-Huotari and Vargo, 2016; Vargo and Lusch, 2016). However, tension may occur between social norms and intrinsically motivated behaviors (e.g., the urge to sing along when listening to music in public). This tension is resolved by ranking potential value outcomes; in this case, resolution lies in determining whether the potential for social embarrassment or reprimand for breaking social rules is more important than the urge to sing. Thus, actors' motivation to integrate resources is the phenomenological assessment of intrinsic motives, moderated by a social context through institutional arrangements.

Second, Study 2 introduced the idea of looking into resource integration outcomes from two separate perspectives, namely, subjective and objective perspectives. In this manner, the research lay the foundation for what was later developed into instrumental and experiential outcomes of resource integration processes. The idea stemmed from motivation theories, in which motivation is categorized into basic intrinsic and extrinsic forms (Ryan and Deci, 2000a), and intrinsically motivated behaviors occur for their own sake, whereas extrinsically motivated behavior is governed by the prospect of an instrumental gain or loss (Cerasoli et al., 2014).

Third, the study contributes to non-conscious and conscious resource integration. Many resource integration activities are mundane, everyday activities performed in a spontaneous, relatively less conscious manner (Edvardsson et al., 2011; Grönroos and Voima, 2013). People have the ability to act without being aware of the motives and values underlying their behaviors, that is, to act non-consciously (Locke and Latham, 2004). According to Kihlstrom (1987), cognitive unconscious mechanisms are mental structures and processes that operate outside phenomenal awareness but influence conscious experience, thought, and action. Social psychology researchers recognize both conscious and non-conscious mechanisms as playing important roles. Non-conscious and conscious resource integration is further elaborated in the second appended paper.

Figure 6. Conceptual framework for resource integration



Source: Findsrud et al. (2018)

The conceptual contribution of the paper is summarized in Figure 6, which shows the process of resource integration and consists of . . .

> resource integration enabled by actor's competences and driven by actor's motivation, leading to the specific direction, intensity, and persistence of the actor's behavioral and cognitive activities. These activities inform the actor, thus increasing the level of experience and strengthening the actor's competencies. All aspects throughout the process influence and are influenced by conditions of the service and social context. (Findsrud et al., 2018: 509)

4.3 Paper 3—Am I doing it right? Resource integration performance through multidexterity

The third paper was co-authored with Professor Bård Tronvoll and has been submitted to the *Journal of Business Research*. It was presented at the *Quis Conference* in June 2019. As the first author of the paper, I was the primary contributor and responsible for developing the conceptual framework and linking performance research to resource integration. Professor Tronvoll acted as a reviewing co-author, providing invaluable insights, recommendations, and contributions to the development of the conceptual framework (e.g., creating the figure and linking homopathic and heteropathic resource integration to predictable and dynamic realms, respectively), the positioning of the paper, and the development of the propositions. He also offered comments and edited the manuscript.

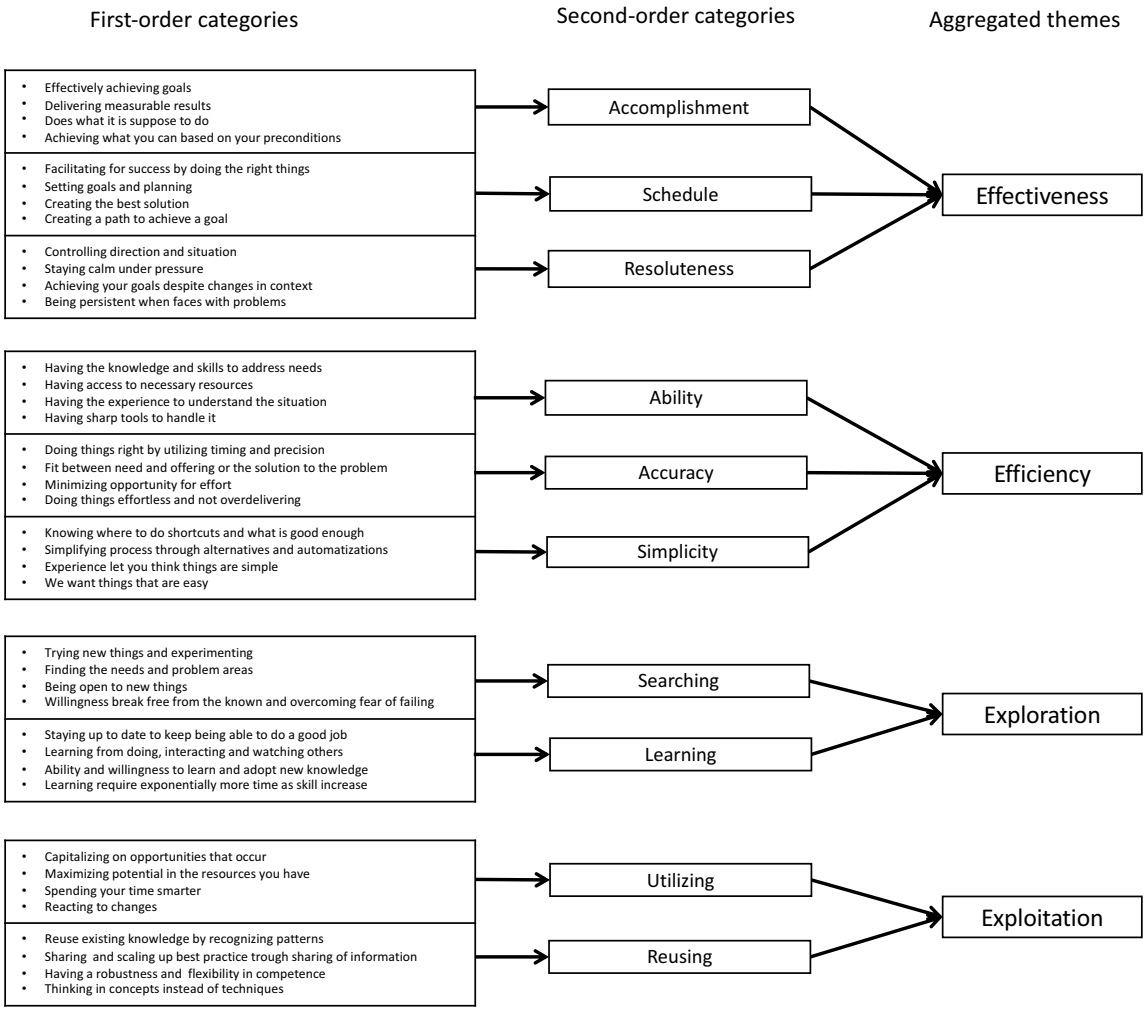
The idea for the study had its origins in the work of Ostrom et al. (2015), who found that developing improved measures of service performance and its impact are ranked the highest in importance across subtopics among 12 research priorities and the third highest with regard to the importance–knowledge gap. Resource integration conceptually overlaps with service (Peters et al., 2014), and to our knowledge no article has in-depth discussed resource integration performance from an S-D logic perspective.

Effectiveness and efficiency are repeatedly used as central terms in the assessment and measurement of performance in contexts such as organizations (e.g., Mouzas, 2006; Kumar and Gulati, 2009; Vorhies and Morgan, 2003), the success of a new product development process (e.g., Madhavan and Grover, 1998; Hoyer et al., 2010), marketing (e.g., Morgan et al., 2002), teams (e.g., Hoegl and Parboteeah, 2007), supply chains (e.g., Chan, 2003), and schools (e.g., Ostroff and Schmitt, 1993). Effectiveness and efficiency might be synonymous for many managers, but each has a distinct meaning (Kumar and Gulati, 2009) and has been clearly distinguished in research (Ostroff and Schmitt, 1993). *Performance* is an umbrella term for all concepts that consider the success of an actor and its activities (Tangen, 2005); these concepts include financial performance indicators (Morgan and Rego, 2009), customer loyalty (Morgan and Rego, 2009), speed (Perez-Nordtvedt et al., 2008; Tangen, 2005), customer satisfaction (Neely et al., 1995), and usefulness (Perez-Nordtvedt et al., 2008). However, *effectiveness* and *efficiency* assume the existence of knowledge on how to properly integrate resources, meaning that there is a "right" way to perform such a task, independent of time and context (Findsrud and Tronvoll: Paper 3).

No such strict rules exist in social interactions, and context is dynamic and continually changing (Ng et al., 2012). Discussing effectiveness and efficiency alone in these situations does not cover the dynamic and innovative aspects of resource integration, highlighting the need to include concepts that point to coping with complex, ever-changing, and even chaotic situations. Exploration and exploitation are core dimensions related to innovation (Wilden et al., 2018); exploration is associated with innovation, search, and flexibility, whereas exploitation is connected to implementation and choice (Wilden et al., 2018).

Utilizing a discovery-oriented, theory-in-use approach (Tuli et al., 2007; Ulaga and Reinartz, 2011; Zeithaml et al., 2020) to understand resource integration performance, we conducted 35 interviews, each averaging 75 minutes. Through a thematic coding process, four aggregated themes were extracted (Figure 7).

Figure 7. Coding structure of Paper 3



Source: Findsrud and Tronvoll (Paper 3)

The performance themes—effectiveness, efficiency, exploration, and exploitation—reflect the need to move from a single-attention focus to a multi-attention focus. This practice is understood as multidextrous thinking designed to advance the continuous delivery of successful resource integration in a dynamic context (Findsrud and Tronvoll: Paper 3). Study 3 offered a framework for resource integration performance on the basis of two realms: the predictable and the dynamic. The predictable realm is influenced by the stability of a context and reflects an evaluation of activity and how things are done right and in the right order. It is oriented toward the operations of an organization or the ability of an activity itself in producing intended value. The dynamic realm shifts emphasis to adapting to changes in context, developing competencies, and reusing existing knowledge (Findsrud and Tronvoll: Paper 3). Finally, the study contributes to the conceptualization of resource integration performance by defining the four dimensions summarized in Table 8. The four dimensions and the two realms of resource integration performance are depicted in Figure 8.

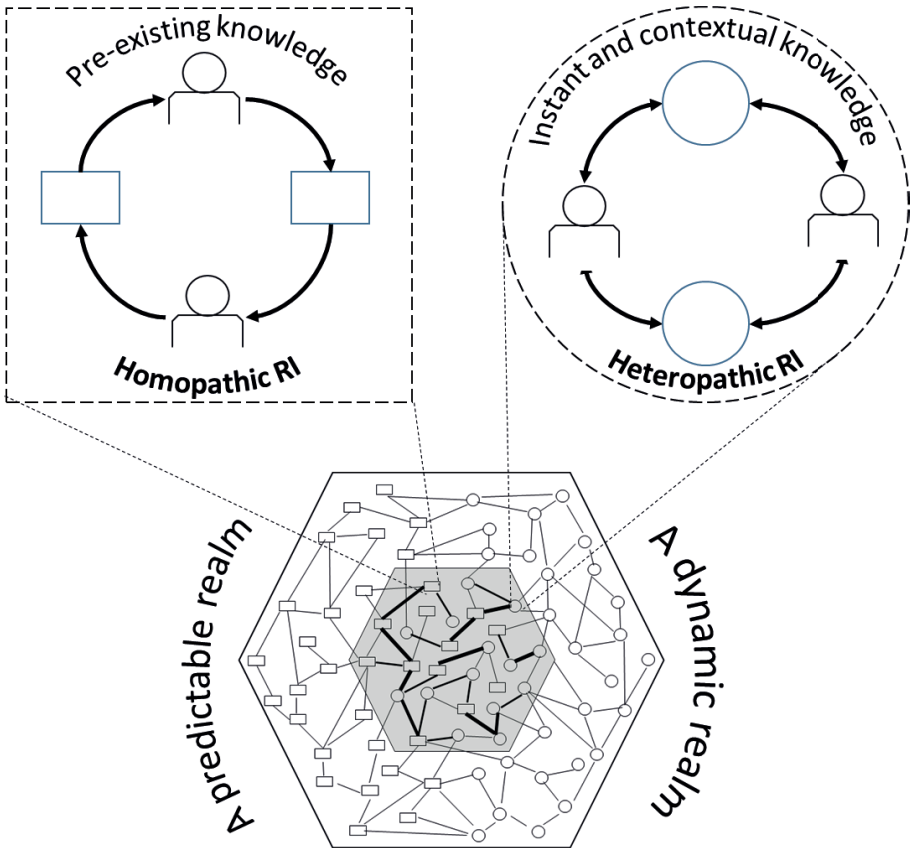
Table 8. Defining dimensions of resource integration performance

Construct	Definition
Resource integration performance	An actor's observed ability to create value by multidextrous balancing of explorative and exploitative activities in pursuit of effectiveness and efficiency when using the available resources in a given context
Resource integration effectiveness	The accomplishment of intended outcomes through scheduling and resoluteness
Resource integration efficiency	The ability to accomplish the intended value outcomes with maximum accuracy, simplicity, and automation
Explorative resource integration	The use of resources to acquire new resources through searching and learning
Exploitative resource integration	Maximizing realization of the value of available resources by utilizing and reusing existing resources

Figure 8 illustrates how homopathic resource integration falls into the predictable realm (squares) and heteropathic efforts belong to the dynamic realm (circles). Performance is best achieved by multidextrously managing the dimensions, as depicted in the grey area where overlaps exists between the two realms. The circles and squares are resource integration activities, and the links between these components indicate paths where resources (i.e., information) are transferred back and forth. Resource integration performance is the sum of transferred resources within a system; the thicker the line, the greater the volume of resources transferred. A highly performing actor has more and/or thicker connections, indicating that the sum of transferred resources under the

auspices of this actor is higher. In a low-performance situation, however, there are fewer and/or weaker connections, denoting fewer transferred resources. Because fewer resources are transferred, less value is co-created.

Figure 8. Dimensions and realms of resource integration performance



Source: Findsrud and Tronvoll (Paper 3)

The third study put forward six propositions on the basis of the findings and the proposed framework.

Proposition 1
Resource integration performance requires a balancing of exploration and exploitation to ensure effectiveness and efficiency.

Proposition 2
While the effectiveness and efficiency of resource integration are mainly determined by pre-existing knowledge and homopathic processes, explorative and exploitative resource integration are mainly determined by contextual knowledge and heteropathic processes.

Proposition 3
Resource integration performance is individually determined by the sum of resources' potential value transferred during integration activities, influenced by timing and context.

Proposition 4
High levels of competency reduce perceived complexity, enabling actors to prioritize those activities considered most important for performance.

Proposition 5
Contextual flux influences the preferred type of resource integration.

Proposition 6
Successful resource integration performance requires a balance of homopathic and heteropathic efforts.

The study concluded with resource integration as a social and contextual construct, and the flux of context was projected as influential in an actor's decision to rely on explorative and exploitative activities or pursue effectiveness and efficiency (Findsrud and Tronvoll: Paper 3). Finally, the study defined resource integration performance as an actor's observed ability to create value with the multidextrous balancing of explorative and exploitative activities in pursuit of effectiveness and efficiency when using the available resources in a given context.

4.4 Paper 4—Agile approach to service innovation: Creating valuable service innovation with agile resource integration

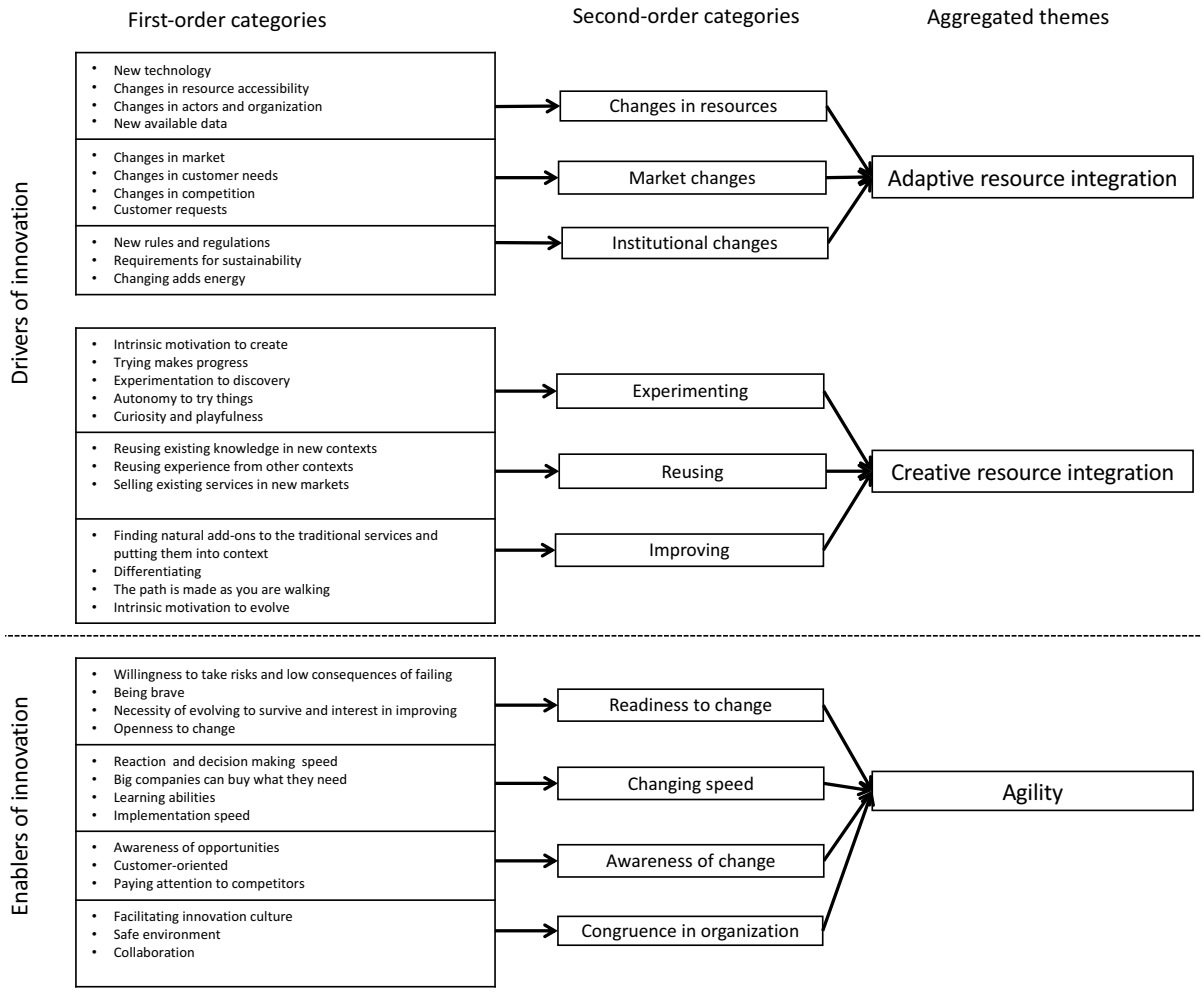
I am the sole author of the fourth and final paper, which has been submitted to the *Journal of Creating Value* and was presented at the *10th Naples Forum on Service* held from June 4 to 7, 2019. The purpose of the research was to explore the drivers and enablers of innovation in service.

I postulated that the existing literature on service innovation centers on the newness of a service (Witell et al., 2016) and types of service innovation (Helkkula et al., 2018). It advanced the argument that agility is a salient competence that enables actors to remain competitive in dynamic contexts. By focusing on what drives actors to engage in activities and behaviors that occasion service innovation through the repeated creation of new services or the search for new markets, the study identified drivers of sustainable service innovation.

The study used a discovery-oriented, theory-in-use approach in casting light on the aforementioned drivers and enablers (Tuli et al., 2007; Ulaga and Reinartz, 2011). A total of 12 informants were interviewed in sessions that each averaged 75 minutes. The informants were from four companies that were considered innovative or were working on innovative projects in their respective industries. Through a thematic coding process, two drivers, namely, adaptive

resource integration and creative resource integration, and one enabler, that is, agility, were extracted (Figure 9).

Figure 9. Coding structure for agile resource integration



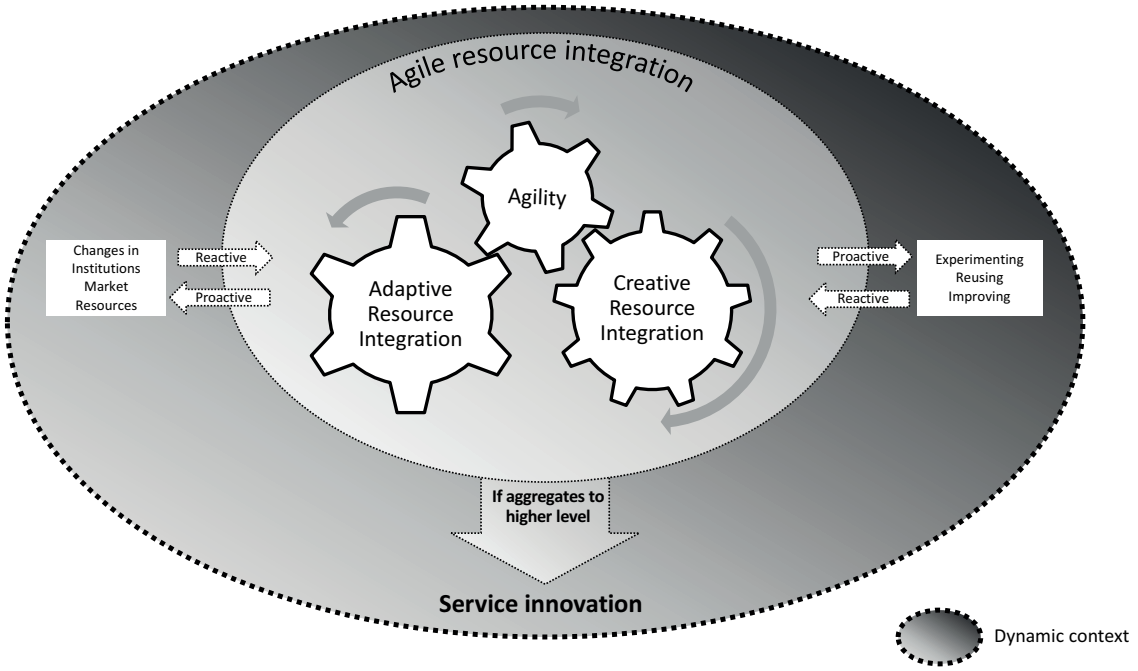
Source: Findsrud (Paper 4)

The findings unraveled two major reasons companies work on innovation—to adapt to changes for sustained competitiveness or to remain at the forefront of market development—projecting these reasons as fundamental for the survival of a company. Adaptive resource integration and creative resource integration result from motivational drivers of service innovation and are enabled by agility. Agile resource integration for the purpose of service innovation is divided into two approaches: the proactive and the reactive. The study contended that agile resource integration embraces flexible and ambidextrous processes, wherein traditional innovation is often predictable and sequential, thus enabling rapid responses to changing environments or customer needs (cf. Erickson et al., 2005). The agile approach therefore occupies the opposite side of the bureaucracy scale (Holbeche, 2019). An agile approach to resource integration embraces feedback

and change (Williams and Cockburn, 2003) and relies on people and their creativity (Dybå and Dingsøyr, 2008).

Study 4 conceptualized agile resource integration using the literature on agile software development (e.g., Dybå and Dingsøyr, 2008), opportunity recognition (e.g., Ardichvili et al., 2003), imagination (e.g., Kier and McMullen, 2018), and creativity (e.g., Amabile, 1983) from scientific fields such as psychology and entrepreneurship to enhance the understanding of the role that resource integration plays in service innovation. The study formulated an agile resource integration framework that sheds light on why and how sustainable service innovation emerges from resource integration (Figure 10). As argued in the paper, creative resource integration and/or adaptive resource integration results from proactively creating change. Alternatively, actors are reactively forced to change because of contextual changes and iterative learning processes. Furthermore, agility links adaptive and creative resource integration efforts in organizations, enabling actors to function together as a well-lubricated machine as they engage in disruptive activities and operate in dynamic contexts.

Figure 10. Agile resource integration for service innovation



Source: Findsrud (Paper 4)

The study's findings showed that when it comes to service innovation, actions speak louder than words, and actors engage primarily in problem-solving activities, adapt to changes, and seize opportunities in the market. Often, the bottleneck in service innovation is not idea generation but the lack of drive to constantly improve, the absence of a culture that welcomes change among

involved actors, and the lack of acceptance in top management. Additionally, creative resource integration activities may not be considered innovative at a present moment but may, in retrospect, be labeled as innovation as practices aggregate.

Against this backdrop, Study 4 defined agile resource integration as the readiness of actors to quickly find creative ways of using and combining available resources in context, proactively or reactively embracing the iterative emergence of co-created value. Finally, the study set forth four recommendations for organizations to become more agile, adapted from the four core values in the agile manifesto (Dybå and Dingsøyr, 2008: www.agilemanifesto.org): (1) Focus on people and interactions over processes and tools; (2) focus on activities that generate value in context, not practices; (3) focus on collaboration over individual efforts due to emergent outcomes, and (4) Focus on following the market over strategizing.

Creativity is thinking up new things. Innovation is doing new things.

– Theodore Levitt, famous economist

5 Discussion and contributions

This chapter discusses the contributions of the four appended papers as a whole and revisits and extends the conceptualization of resource integration and the eight assumptions (Chapter 2 and Table 4) concerning the three research questions. In the first section of this chapter, the conceptualization of resource integration is revisited in relation to prerequisite resources (5.1), activities (5.2), and outcomes (5.3), with consideration for the contributions of the appended papers. Revisiting the prerequisites of resource integration is meant to show how actors' motivation, in combination with competencies (e.g., knowledge, skill, and agility), identifies the mechanism underlying performance. Such revisiting thus answers RQ1 on what mechanisms drive and enable actors to integrate resources to co-create value. Resource integration performance, which entails the multidexterity to balance effectiveness, efficiency, exploration, and exploitation, is enabled by non-conscious and conscious resource integration mechanisms. Illuminating this idea answers RQ2 on the characteristics of resource integration activities that successfully achieve outcomes and further contributes to clarifying RQ1. Resource integration is a microfoundation from which service innovation emerges; thus, the conceptualization of resource integration gives rise to a conceptual framework for exploring the mechanisms that drive and enable service innovation (RQ3). Creative resource integration anchored in proactive or reactive agile processes is fundamental for outcomes that, in retrospect, count as service innovation. These insights answer the third RQ. The fourth section of this chapter lays out the theorization about resource integration through the 12 assumptions on resource integration and service innovation. The chapter ends with a presentation of the corresponding integrative framework.

5.1 Revisiting the prerequisite resources

The consensual understanding of operant resources in S-D logic does not directly motivate actors because having competencies is insufficient for activity to occur (Findsrud et al., 2018: Paper 2). Operant resources must therefore be conceptually extended to include all entities that are available to an actor and that enable such an agent to integrate resources efficiently and/or effectively (Madhavaram and Hunt, 2008). Despite being extensively investigated within several scientific fields (e.g., Deci and Ryan, 1985a; Cameron and Pierce, 1994), motivation has received inadequate

attention in scholarship on S-D logic. Accordingly, this section begins with an overview of motivation theories[11] that enable the integration and differentiation of concepts from psychology and S-D logic through the process of relating (MacInnis, 2011). Subsequently, agility is introduced before the assumptions in Chapter 2 are revisited for extended insight.

5.1.1 Motivation theories

The motivation literature embodies a valuable research field for resource integration in three ways. First, it articulates a driver of activity. Second, in combination with competencies, motivation is seen as fundamental to performance. Finally, it provides insights into internal and external influences. This overview of motivation theories was based on a literature review conducted for Study 2 (i.e., Findsrud et al. (2018: Paper 2)), with an informal approach that first involved mapping 16 motivation theories, such as the hierarchy of needs (e.g., Maslow, 1943), expectancy theory (e.g., Vroom, 1964), need theory (e.g., McClelland, 1961), self-determination theory (Deci and Ryan, 1985b), and social cognitive theory (Bandura, 1986). These theories were mapped in regard to the origins, constructs, and usefulness of informing S-D logic. The theories originate from and/or have been applied to several fields, such as psychology (e.g., Cerasoli et al., 2014), marketing (e.g., MacInnis et al., 1991), consumer research (e.g., Pincus, 2004), organizational behavior (e.g., Mitchell and Daniels, 2003), management (e.g., Locke and Latham, 2004; Steel and König, 2006), economics (e.g., Ariely et al., 2009; Xia and Suri, 2014), sociology (e.g., Turner, 1987), and education (e.g., Cameron and Pierce, 1994; Oxford and Shearin, 1994). This chapter complements the overview presented in Findsrud et al. (2018: Paper 2).

Motivation theories are used to explain human behaviors (Locke and Latham, 2004) and are valued because of their impact on producing activity that, in turn, affects outcome (Ryan and Deci, 2000b). Motivation is not the only cause of behavior, but it is typically part of the discussion (Mitchell and Daniels, 2003) and often, in combination with ability, serves as a predictor of behavior and performance (Mitchell and Daniels, 2003; Ambrose and Kulik, 1999). Motivation theories have evolved from adopting a sole focus on biology to a more complex orientation on social–cognitive motivations, wherein paradigms of motivation theory have a long, interconnected history (Pincus, 2004) and have progressed in multiple directions over the last several decades (Locke and Latham, 2004). For the most part, these theories do not so much contradict one another as focus on different aspects of the motivation process (Locke and

[11] A description of the method used for the literature review is in Chapter 3.2.1.

Latham, 2004; see also Steel and König, 2006). Deciding on what motivational theory is most effective at explaining behavior depends on factors such as context (e.g., Ryan and Deci, 2000b; Latham, 2009), social influence (e.g., Bandura, 2009), personality traits (e.g., Steel and König, 2006), and the nature of a task (Xia and Suri, 2014). Predominantly, motivation theories can be divided into three categories, namely, need-based (e.g., need theory), process-based (e.g., expectancy theory), and social-based (e.g., social cognitive theory) perspectives. This thesis theorized on resource integration and uncovered what compels actors to integrate resources and discover new and novel ways of integrating resources. Hence, I used drivers belonging to all the three categories of motivation theories in elaborating on how these can inform S-D logic. For instance, self-determination theory (Ryan and Deci, 2000b), from need-based theories, has been extensively used and highlights the importance of inner human resources that support inherent growth tendencies and innate psychological needs as a foundation for self-motivation. Temporal motivation theory (process-based theory) conveys the significance of time and how a perceived increase in time to benefit negatively affects motivation (Steel and König, 2006). Social cognitive theory (Bandura, 2001b) highlight actors as social beings (social-based theory) in a system, explaining psychosocial functioning regarding triadic reciprocal causation (Bandura, 1986). Personal factors in the form of cognitive, affective, and biological events, behavioral patterns, and environmental events all operate as interacting determinants that influence one another bidirectionally (Bandura, 2001a). Social cognitive theory also emphasizes that much human learning and behavior occur in social environments (Schunk and Usher, 2012) and that observing the behaviors of other actors and the consequences of these actions facilitates learning the sequence of actions. Later, this knowledge serves as a guide for actions intended to achieve desired outcomes (Bandura, 1977; 1986).

A consensus exists as to the effects of motivation on the direction (choice), intensity (effort), and duration (persistence) of an activity (e.g., Locke and Latham, 2004; Schunk and Usher, 2012; Latham, 2009). These three elements of motivation were key in developing the second appended paper. Several scholars included a fourth element, such as form of behavior (e.g., Ambrose and Kulik, 1999; Pinder, 2008), equifinality (e.g., Ryan and Deci, 2000b), or task strategy (e.g., Mitchell and Daniels, 2003), with the two latter elements defining the patterns of behavior produced to reach a particular goal (Mitchell and Daniels, 2003).[12]

[12] The concept of equifinality was originally included in Paper 2 but was removed during the review process.

Motivation is most relevant concerning resource integration and value co-creation because actors need not only to be able but should also be willing to (Dörnyei and Ushioda, 2013). A general assumption in economic theory is that an intelligent and well-informed actor formulates probabilities and estimates expected utilities for alternative actions prior to deciding and acting (Emerson, 1976). However, the assumption of rationality and well-informed decision making is a utopia (Steel and König, 2006). For instance, motivation crowding theory, comprising the crowding-out effect, is one of the most important anomalies in economics, as the effect suggests the opposite of fundamental economic law (Frey and Jegen, 2001). The theory states that introducing economic benefits to an action may diminish the intrinsic motivation to perform the task (Frey and Jegen, 2001).

In summary, motivation drives actors to integrate resources in their efforts to co-create value for themselves and others. It pushes the direction, intensity, and persistence of resource integration and affects the equifinality of how intended value-in-context is achieved. Motivation theories substantially clarified the three research questions for three reasons. First, motivation is the missing driver of theorization about resource integration (Findsrud et al., 2018: Paper 2). Second, research showed that intrinsic motivation potentially drives actors to seek creative, novel, or improved ways of integrating resources (Ryan and Deci, 2000b), which is often the situation from where service innovation stems (Edvardsson and Tronvoll, 2013). The findings in the fourth appended paper demonstrated that actions speak louder than words as regards service innovation. Thus, motivation is an important driver of service innovation. Third, motivation, in combination with competencies, is fundamental to performance and is therefore valuable in extending the conceptualization of resource integration regarding performance.

5.1.2 Agility

The issue of agility has enjoyed a boost in interest in the last couple of years, with publications and special issues devoted to it in, for instance, the *Journal of Business Research* (Paluch et al., 2019) and the *Journal of Creating Value* (Rademakers et al., 2019). Agile organizations adapt to predictable changes while also adjusting to unpredictable occurrences quickly and efficiently (Holbeche, 2019). As services become increasingly individualized to meet specific customer needs, service employees are pressured not only to be efficient but also to adapt to changing customer requirements (Sjödin et al., 2020). Agile processes emerged as a reaction to traditional, plan-based methods (Dybå and Dingsøyr, 2008) as the latter often operate under the assumption that an optimal, predictable, and reusable solution exists for every problem and that this process favors

an efficient and foreseeable process (Dybå and Dingsøyr, 2008). However, there might not always exist a "right" solution to a problem (Findsrud and Tronvoll: Paper 3). Agile approaches emphasize "continuous design, flexible scope, freezing design features as late as possible, embracing uncertainty and customer interaction, and a modified project team organization" (Serrador and Pinto, 2015: 1041). According to Paluch et al. (2019), being agile is about making mistakes and learning from them. Thus, feedback and change are fundamental in agility, and agile approaches embrace, rather than resist, change (Williams and Cockburn, 2003). Moreover, unpredictable agile processes rely on people and their creativity (Dybå and Dingsøyr, 2008), with these processes involving investing in learning over planning (Bianchi et al., 2020). Calnan and Rozen (2019: 191) stated that "the increased speed, uncertainty, and complexity that define today's competitive landscape require organizations to become adaptable and agile to survive, let alone thrive." Agile organizations value the importance of individuals and interactions, incremental delivery, collaboration with customers, and response to change (Ghezzi and Cavallo, 2020). Hence, agility may be one of the key competencies needed for organizations to become quick, resourceful, and adaptive (Holbeche, 2019) in facing the market of the future.

When a context is complex and unpredictable, a variety of individuals in an organization must be able to respond to it (Mintzberg and Waters, 1985). Agility needs to be scaled beyond R&D to achieve innovation (Holbeche, 2019), creating congruence in an organization (Annosi et al., 2020). On this basis, agility may be the missing piece in understanding resource integration in dynamic contexts as well as the mechanisms that drive and enable of service innovation (Findsrud: Paper 4).

5.1.3 Revisiting the assumptions from Chapter 2

Findsrud et al. (2018: Paper 2) extended the conceptualization of operant resources to include both enablers and drivers. Operant resources are also dynamic and can be rejuvenated and replenished (Edvardsson et al., 2011) through explorative and exploitative resource integration (Findsrud and Tronvoll: Paper 3). In view of this, operant resources conceptually include both the enablers (e.g., competence, explorative and exploitative capabilities, and agility) (Findsrud and Tronvoll: Paper 3; Findsrud: Paper 4) and drivers (e.g., motivation) of resource integration (Findsrud et al., 2018: Paper 2). Conceptually including all entities accessible to an actor that paves the way for efficiently and/or effectively integrating resources (Madhavaram and Hunt, 2008) into operant resources, and perhaps most importantly, incorporating motivation further validate the role and strategic significance of operant resources. Thus, the first assumption in Chapter 2, *operant*

resources are fundamental for resource integration and essential for value realization, is supported by the findings in the appended papers.

The second assumption in Chapter 2 is that resource integration is driven by the activities of actors through their operant resources. Motivation, in combination with competencies, provides the mechanism for performance, and Findsrud and Tronvoll (Paper 3) contributed to explorations into the performance aspect of resource integration. Not all actors have equal ability to unlock value from resource integration activities (Hibbert et al., 2012). For instance, some individuals are better at driving than others (e.g., have a lower crash rate or can drive faster in a competition context). According to Karpen et al. (2012), an actor's portfolio of competencies determines the effectiveness and efficiency of resource integration and value actualization as a high operant resource density and the ability to make use of resources afford actors increased potential to achieve desired outcomes. Accordingly, *actors perform resource integration through operant resources that entail both enablers (e.g., competences) and drivers (e.g., motivation).*

Institutions guide resource integration (Koskela-Huotari and Vargo, 2016; Vargo and Lusch, 2016), and tension may occur between social norms and intrinsically motivated behaviors (e.g., the urge to sing along when listening to music in public). This tension is resolved by ranking potential value outcomes. Resource integration must reconcile the duality between personal and social influence on activity. Social influences operate through psychological mechanisms to produce behavioral effects (Bandura, 2001b). For contexts to regulate motivation, people must grasp its meaning and synthesize this meaning with respect to their other goals and values (Ryan and Deci, 2000b). Even seeing people similar to oneself succeed by perseverant effort raises observers' belief in their own abilities (Bandura, 2009). Thus, *actors' motivation to integrate resources is the phenomenological assessment of intrinsic motives, moderated by the social context through institutional arrangements.* On the basis on the contention in this paragraph, the findings in Findsrud et al. (2018: Paper 2), and social-based motivation theories (e.g., social cognitive theory), the assumption that *resource integration affects and is affected by context and service ecosystems* is also supported.

One of the initial assumptions states that resource integration is affected by the accessibility of necessary resources in a context. We previously argued on the necessity of both competencies as enablers of resource integration and motivation as the driver of direction, intensity, and persistence in resource integration activities. Accessibility is also implicated in motivation theories. According to goal setting theory (Latham, 2009), for example, the resources needed to attain a goal must be accessible. Findsrud and Tronvoll (Paper 3) also found that *being able* means having the necessary competencies and tools, and although a single actor need not possess all the necessary resources, he or she must know how to access them. For instance, it does not matter

that you want to pay your mortgage if you do not have the money to do so. Moreover, the concept of equifinality refers to a situation wherein an intended outcome can be reached from different initial conditions and by a variety of combinations of resources; two or more combinations of resources can be equally effective in achieving high performance (Fiss, 2007). Thus, the more tools (e.g., knowledge, skills, systems, software) one has in one's toolbox, the greater variety of needs one can address (Findsrud and Tronvoll: Paper 3). Consistent with this contention, then, the findings in the appended papers support the assumption that *resource integration is affected by the accessibility of necessary resources in the engaged actors' context.*

5.1.4 Extending the assumptions about the prerequisite resources

Resource integration represents the foundation from which service innovation emerges (Findsrud and Dehling, 2019: paper 1). In this section, the prerequisites are revisited to elaborate on the prerequisites for resource integration that leads to service innovation.

Understanding how service innovation emerges from resource integration activities necessitates increased focus on the principal prerequisites that bring about service innovation (Findsrud: Paper 4). A service innovation is a new service experience or service solution, and increasing competence is the key to improvement and innovation (Maglio and Spohrer, 2008; den Hertog et al., 2010). Findsrud (Paper 4) used the literature on agile software development (e.g., Dybå and Dingsøyr, 2008), opportunity recognition (e.g., Ardichvili et al., 2003), and creative problem solving (e.g., Basadur et al., 2014) from scientific fields such as psychology and entrepreneurship to enhance the understanding of the role that resource integration plays in service innovation.

Changing practices is necessary for service innovation as the latter emerges and aggregates from novel, improved ways of resource integration (Edvardsson and Tronvoll, 2013; Lusch and Nambisan, 2015; Vargo et al., 2015). However, not all change represents innovation, albeit change can be labeled as an invention (Gustafsson et al., 2020). This change must be enough to spread through a learning and institutionalization process and cause significant changes in organizational capabilities (Perks et al., 2012). Simply put, change must aggregate to a higher level for it to become an innovation (Fuglsang and Sørensen, 2011; Findsrud and Dehling, 2019: Paper 1; Gustafsson et al., 2020).

Agile software development is the opposite of traditional, plan-based methods (Dybå and Dingsøyr, 2008), and agile approaches are particularly valuable in a context "that includes highly uncertain requirements, experimentation with new development technology, and clients willing to explore the ways in which an evolving product can help their business goals" (Racheva et al.,

2009: 145). Moreover, an agile approach embraces change, rather than hangs on to established practices (Williams and Cockburn, 2003). Agile software development thus represents an interesting avenue for informing service innovation (Findsrud: Paper 4). As argued in Paper 4, *agility is a key competence for resource integration in dynamic and changing contexts.*

In the entrepreneurial literature, the trajectory of success for a business often starts with opportunity and the ability of an actor to recognize these opportunities (Ardichvili et al., 2003; Shane and Venkataraman, 2000; Baron, 2006). Opportunity is often understood as "situations in which new goods, services, raw materials, and organizing methods can be introduced and sold at greater than their cost of production" (Shane and Venkataraman, 2000: 220); it implies "the chance to meet a market need (or interest or want) through a creative combination of resources to deliver superior value" (Ardichvili et al., 2003: 108). Ardichvili et al. (2003) suggested that distinctions in opportunity recognition exist because of heterogeneity in individuals' sensitivity to opportunities for the creation and delivery of new value. Research showed that perceiving opportunities is affected by prior experiences and competencies (Shane and Venkataraman, 2000; Ardichvili et al., 2003; Baron, 2006; Kuckertz et al., 2017), which create mental schemas for perceiving new information. Competencies should complement new information to trigger a reaction (Shane and Venkataraman, 2000). In addition, perceiving opportunities as they emerge is strengthened by alertness, which enables opportunities to be recognized by individuals even when they are not actively searching for them (Baron, 2006). This ability to "connect the dots," at least partly, comes from cognitive abilities such as intelligence and creativity (Baron, 2006).

Creativity has received considerable attention within several scientific fields, especially psychology. According to Amabile (1983: 360), creativity has two important characteristics: "that (a) it is both a novel and appropriate, useful, correct, or valuable response to the task at hand and (b) the task is heuristic rather than algorithmic." Thus, being novel on account of bizarreness is not creative; the outcome must be functional (Burroughs and Mick, 2004) or exhibit fit, appropriateness, or utility (Runco and Jaeger, 2012). Findsrud (Paper 4) defined *creative resource integration* as experimenting and reusing resources and practices in new contexts for the purpose of improving value creation. Thus, *creative resource integration represents significant positive shifts in value realization.*

5.2 Revisiting activity

This section begins with an overview of the performance literature that offers insight into the performative nature of resource integration. It then proceeds to revisit the assumptions from Chapter 2.

5.2.1 Performance

Performance is a frequently used word both by researchers and practitioners in discussions, without these individuals defining the term (Neely et al., 1995). For instance, it is debated how firms, employees, athletes, students, and musicians perform, but what performance consists of is often forgotten. *Performance* and *productivity* are often used interchangeably (Tangen, 2005) or defined in the same way, namely, as a combination of efficiency and effectiveness (Kumar and Gulati, 2009; Roghanian et al., 2012). As Table 9 shows, however, there is variation in how these concepts are defined in the literature.

From its origins in the double-entry bookkeeping that emerged in the late 13th century, performance measurement has been comprehensively discussed from operations, strategic control, and management accounting perspectives (Bititci et al., 2012). As recounted by Bititci et al. (2012), the focus of performance measurement shifted, between the 1960s and 1980s, toward new dimensions of performance, such as quality, time, flexibility, and customer satisfaction. Much of the existing performance measurement literature focuses on organizational success (Laihonen et al., 2014), and *performance* is defined with respect to customers' service expectations concerning perceptions in service quality frameworks (e.g., Parasuraman et al., 1988) or organizational goals in frameworks, such as the balanced scorecard (e.g., Kaplan and Norton, 1992), the results and determinants framework (e.g., Fitzgerald et al., 1991), and the performance prism (e.g., Neely et al., 2002).

Even though there are variations in dimensions of performance, two fundamental dimensions are frequently found in the literature—effectiveness and efficiency (Findsrud and Tronvoll: Paper 3). Neely et al. (1995) propounded that the marketing perspective of organizational performance is oriented toward satisfying customers with greater efficiency and effectiveness than competitors. Drucker (1977) defined *efficiency* and *effectiveness* by linking the former to "doing things right" and the latter to "doing the right things." In other words, efficiency evaluates the ability of an actor to achieve output(s) with the minimum level of input(s) and excellence in the resource utilization process (Kumar and Gulati, 2009). In addition, an actor is effective to the extent that he or she

achieves his or her goals (Asmild et al., 2007; Kumar and Gulati, 2009). As shown in Table 9, definitions of effectiveness have a goal or outcome focus, whereas those of efficiency are often underlain by a cost-reduction orientation. Effectiveness and efficiency can therefore be linked to different time horizons, with effectiveness manifested as long-term objectives and efficiency as short-term achievements (Mouzas, 2006).

Table 9. Examples of definitions of effectiveness, efficiency, exploration, and exploitation

References	Definitions of effectiveness	Definitions of efficiency
Drucker (1977)	Doing the right things	Doing things right
Ostroff and Schmitt (1993)	Absolute level of either input acquisition or outcome attainment	Refers to an input–output ratio or comparison
Neely et al. (1995: 80)	Extent to which customer requirements are met	Efficiency is a measure of how economically the firm's resources are utilized when providing the given level of customer satisfaction.
Madhavan and Grover (1998)	Degree to which a product meets the targeted need of a customer.	Measure of resources (including time) used for a given output
Vorhies and Morgan (2003)	Degree to which desired organizational goals are achieved	Ratio of organizational resource inputs consumed to goal/outcomes achieved
Vorhies and Morgan (2003)	Marketing effectiveness is the degree to which desired market-based goals are achieved.	Marketing efficiency is the ratio of marketing performance outcomes achieved to resource inputs consumed.
Grönroos and Ojasalo (2004: 418)	Effectiveness (external efficiency) is the firm's capability to produce a certain level of perceived service quality with a given resource structure or a certain level of customer value with a given resource structure.	Internal efficiency is cost effective use of resources.
Tangen (2005: 43)	Degree to which desired results are achieved	How well the resources of the transformation process are utilized
Asmild et al. (2007: 306)	Proper selection of the activities	Performing activities as well as possible
Hoegl and Parboteeah (2007)	Degree to which expectations regarding the quality of an outcome (e.g., functionality, robustness, performance) are met by a team	Relates to adherence to schedules and budgets
Perez-Nordtvedt et al. (2008)	Degree to which goals are attained	Amount of resources used to produce a unit of output

Reference	Exploration	Exploitation
March (1991: 71) and (Luger et al., 2018)	Includes things captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, and innovation	Includes such things as refinement, choice, production, efficiency, selection, implementation, and execution
Baum et al. (2000: 768)	Refers to learning gained through processes of concerted variation, planned experimentation, and play	Learning gained via local search, experiential refinement, and selection and reuse of existing routines
Vermeulen and Barkema (2001: 459)	Search for new knowledge	Ongoing use of a firm's knowledge base

Reference	Exploration	Exploitation
Benner and Tushman (2002: 679)	A more distant search for new capabilities Exploratory innovation involves a shift to a different technological trajectory.	Involves local search that builds on a firm's existing technological capabilities Exploitative innovations involve improvements in existing components and build on the existing technological trajectory
He and Wong (2004: 483)	Exploratory innovation is technological innovation aimed at entering new product–market domains.	Exploitative innovation is technological innovation activities aimed at improving existing product–market domains.
Gupta et al. (2006: 693)	Refers to learning and innovation	
Li et al. (2008: 119)	Searching distant knowledge that is unfamiliar	Search for knowledge within the organizational boundary and knowledge that is local to their existing knowledge base
Groysberg and Lee (2009: 740)	Seeking change in response to internal strategy or external constraints	Improving efficiency, delivery, or profitability of the existing business model
Fischer et al. (2010: 603)	Exploration of service opportunities through spatial expansion and reconfiguration along the adjacent customer activity chain	Exploitation of service opportunities through temporal expansion of the service business along the primary customer activity chain
Wilden et al. (2018)	Related to innovation, search, and flexibility	Related to efficiency, implementation, and choice

The literature on performance research significantly illuminated RQ2 as it informed how effective resource integration occurs and provided potential determinants of effective resource integration. In this thesis, I used Drucker's (1977) definitions of *effectiveness* and *efficiency*, linking them to doing the right things and doing things right, respectively. If we are to connect effectiveness and efficiency to the terminology in this thesis, then, effectiveness is positioned close to an outcome with a strategic focus, whereas efficiency approximates an activity, placing it close to a prerequisite.

Exploration and exploitation have, in organizational research on innovation and organizational learning, been linked to performance (Wilden et al., 2018), and formal models of exploration and exploitation are incorporated with the argument that successive choices to either explore new knowledge or exploit existing knowledge optimize firms' overall learning and performance (Luger et al., 2018). Similar to effectiveness and efficiency relating to the long and short terms, respectively, exploration and exploitation also generate results in different time scopes. Exploration activities are likely to accumulate costs of experimentation (March, 1991) and do not have a direct effect on short-term performance because they are designed to enable long-term performance (Monferrer Tirado et al., 2019). Exploitation, though, poses a greater certainty of short-term gains (Groysberg and Lee, 2009; Gupta et al., 2006). Exploration and exploitation are linked to learning and innovation and the latter to the incremental improvement of existing practices (Gupta et al., 2006).

All activities involve some degree of learning, even for an actor attempting to do nothing more than replicate past actions; in this respect, the actor continues to accumulate experience and traverse an incremental learning curve (Gupta et al., 2006; Benner and Tushman, 2002). Simultaneous work involving exploration and exploitation is referred to as *ambidexterity* (Luger et al., 2018), defined as "the synchronous pursuit of both exploration and exploitation via loosely coupled and differentiated subunits or individuals, each of which specializes in either exploration or exploitation" (Gupta et al., 2006: 693). However, balancing effectiveness, efficiency, exploration, and exploitation involves a factor of more than two, and in these situations, actors may greatly benefit from being *multidextrous* (Ritter and Geersbro, 2018).

5.2.2 Multidextrous actors

Ambidexterity normally refers to the need to balance the exploitation of existing capabilities and the need to explore the potential of additional activities (O'Reilly III and Tushman, 2013; De Ruyter et al., 2020; March, 1991) or the "ability to perform seemingly conflicting tasks or pursue apparent disparate goals simultaneously" (De Ruyter et al., 2020: 2). A more everyday understanding points to the ability to use both hands simultaneously (Ritter and Geersbro, 2018). In service research, a consensus is that complexity typifies value co-creation, and Findsrud and Tronvoll (Paper 3) argued that such complexity involves a factor of more than two. Complexity prompted Ritter and Geersbro (2018) to question the overlooking and underutilization of the term *multidexterity*. The authors found only a few references to the term (for references see Ritter and Geersbro, 2018). In line with their work, *multidexterity* was regarded in this thesis as an actor's ability to simultaneously perform more than two tasks to achieve different and multiple objectives.

In service research, an actor usually refers to a human, group of humans, or group of humans having access to resources (such as machines, technology, etc.), often in the form of an organization. O'Reilly III and Tushman (2013) asserted that having explorative and exploitative ambidexterity requires structurally separate subunits, each awarded with either engaging in exploration or exploitation. The human mind is already equipped with these subunits for consciousness and non-consciousness; for example, experienced BJJ practitioners describe being able to engage in complex activities without needing to think (Findsrud and Tronvoll: Paper 3).

Humans have a functional consciousness that involves purposive accessing and deliberative processing of information for selecting, constructing, regulating, and evaluating courses of action (Bandura, 2001b). However, a functional consciousness operates both consciously and non-consciously because humans have limited cognitive abilities (Kihlstrom, 1987; Thornton et al.,

2012; Vargo and Lusch, 2016), and the focus of attention can hold only limited chunks of information at a time (Oberauer, 2002). Service research often refers to institutions and institutional arrangements, drawing on sociology as a tool for actors to overcome this limitation, with rules and norms guiding actions (Vargo and Lusch, 2016), or practices wherein actors use sense-making frameworks to perform routine activities (Skålén et al., 2015b).

Conversely, the philosophical and psychological literature distinguished between two kinds of thinking: one fast and intuitive, the other slow and deliberative (Kahneman, 2011; Evans and Stanovich, 2013). These dual-process theories, which are ancient in origin but widespread, assume that fast type-1 processing generates intuitive default responses, in which subsequent reflective type-2 processing may or may not intervene (Evans and Stanovich, 2013). Non-consciousness[13] can be seen as mental structures and processes that operate outside phenomenal awareness but nevertheless influence conscious experience, thought, and action (Kihlstrom, 1987). These routinized or automatic processes consume little or no attentional resources and enable actors to perform two or more tasks simultaneously (Kihlstrom, 1987). Non-conscious processes in the brain are of a very high and rapid capacity, with great strengths. For instance, chess grandmasters have been examined for their ability to deliberately develop a vast repertoire of patterns in their memories that allows them to respond to contingencies in an automatic and proficient manner (Dane and Pratt, 2007). Notwithstanding these advantages, however, non-consciousness also has its weaknesses; for example, an automobile driver may not remember landmarks passed along the way (Kihlstrom, 1987). It is also characterized by biases as it attempts to assimilate information into pre-existing knowledge structures (Kaufman, 2011); for instance, individuals can actively seek out news stories and information about issues (e.g., political, climate change, vaccines, gun control) that confirm their pre-existing assumptions and ignoring the rest.

From an organizational perspective, the distinction between non-conscious and conscious resource integration can be related to technology-dominant and human-dominant resource integration, respectively. Robotization and the use of service robots is forecasted to be a dramatic evolution in service (Jörling et al., 2019). The acceptance of services becoming ever more intertwined with technology in the form of artificially intelligent agents intensifies the significance of humans' adaptive performance in relation to non-routine tasks that require a flexible mind, the capacity to make decisions on the basis of incomplete information, intuition, problem-solving

[13] Concepts such as the unconscious, subconscious, and non-conscious have slightly different meanings in the literature. For a review, see Kihlstrom JF (1987) The cognitive unconscious. *Science* 237(4821): 1445-1452. However, I refer to the non-consciousness that all the terms share and thus use the term *non-conscious* throughout the thesis.

ability, and artistic and aesthetic sense (Corazza, 2016). Service provision increasingly relies on digitalization and a human-to-non-human interaction (e.g., self-service, chatbots) to co-create value (Cenamor et al., 2017). Jörling et al. (2019) proclaimed that service robots (e.g., autonomous lawn mowers or vacuum cleaners) are perceived as social agents owing to their physical embodiment and high level of agency. Resource integration often relies on an interplay between human and non-human actors (Storbacka et al., 2016), and the characteristics of type-1 and type-2 processing are also fitting for human-dominant and technology-dominant resource integration.

Non-conscious and conscious modes of processing information expand our understanding of the psychological mechanisms that enable actors to more efficiently integrate resources. This is an important element for answering RQ1 and RQ2. A person can even have a reason to behave without necessarily being aware of it (Reiss, 2004), indicating that many of our choices in everyday life are guided by habits and motivated by the path of least resistance.

5.2.3 Revisiting the assumptions from Chapter 2 about resource integration activities

In S-D logic terms, *interaction* refers to collaborations among actors or the ways by which actors engage with others in their service networks to integrate resources (McColl-Kennedy et al., 2012). However, interactions feature all resources, including tangible operand resources that provide feedback to actors throughout an integration activity; such feedback affects motivations and competencies. Available information provides opportunities for actors to augment their competencies, and any information they perceive and process constitutes feedback. Learning from feedback is important whenever we talk about processes (Findsrud: Paper 4) because even the simple act of trying to replicate past actions involves some degree of learning (Gupta et al., 2006). Car travel provides a driver with information in the form of sights, touch, sounds, and smells. When the actor processes this information, he or she can use it to achieve an intended value outcome (e.g., keeping the car on the road). In line with Ramaprasad (1983), I treated *feedback* as information about the difference between actual and intended progress along the resource integration process, as processed by an actor. However, resource integration does not always have an intended outcome, so I extended this definition to the difference between an actor's actual experienced value (e.g., enjoyment) and the actor's perceived acceptable level of value. Going back to our example of the automobile driver, his or her ability to interpret feedback and the experience that he or she receives from it influences his or her next activities. Thus, the actor interacts with the car, and this interaction creates a learning process in which the actor increases

his or her competencies and skills through experience, with a greater likelihood of generating the intended value. Using information from resources in context provides feedback about the effectiveness associated with achieving intended value outcomes. The difference between expected and actual effectiveness determines the motivation to carry on with resource integration.

Service innovation processes heavily depend on correspondence and reciprocity (Ballantyne et al., 2011; Edvardsson et al., 2012). Similarly, resource integration processes provide feedback to actors throughout activities, and such feedback affects motivation and competencies. The feedback from resources and contexts is essential for explorative and exploitative resource integration, which helps actors build their competence and maximize the potential of available resources. Increasing knowledge and skills through learning is hypothesized to be an important asset for service innovators (den Hertog et al., 2010), and knowledge and skills are considered prerequisites that enable effective and efficient resource integration (Karpen et al., 2012). Thus, resource integration performance requires an actor to balance explorative and exploitative resource integration with the quest for effective and efficient resource integration. Study 3 contributes to the literature by its conceptualization of how resource integration leads to value creation through its definition of resource integration performance. Accordingly, the assumption *resource integration involves using and interacting with resources, including other actors,* is supported but requires an addition correspondingly to the previous discussion. Thus, *the process of combining resources provides feedback to involved actors, thereby influencing their motivation and positively affecting their competencies.* Moreover, the assumption that value realization is shaped by the effectiveness and efficiency of resource integration activities, is missing important elements and therefore must be extended to include all four dimensions for performance. Therefore, *value realization is shaped by the multidextrous balancing of explorative and exploitative resource integration with the effectiveness and efficiency of resource integration activities.*

5.2.4 Extending the assumptions about resource integration activities

The distinction between two kinds of thinking—fast and intuitive and slow and deliberative—is one of the crucial elements in understanding the psychological mechanisms behind resource integration. Much human activity is non-motivated, compulsive, and habitual (Pinder, 2008). Motivation influences the direction of effort (focus of attention), which in turn, influences awareness about resource integration. A sufficiently motivated actor can deploy a conscious process to screen, organize, prioritize, and coordinate information when making a choice (Laran et al., 2016) about resource integration activities. Thus, motivation is necessary for conscious

resource integration to occur. However, through the learning of a skill, an actor can move from initially relying on conscious processes to performing non-consciously (Kihlstrom, 1987). This is also indicated by the inability of many musicians or athletes to articulate their skills to others and by the fact that conscious attention to them actually interferes with their performance (Kihlstrom, 1987). These non-conscious activities are often viewed as an automated version of conscious activity (Laran et al., 2016). A defining feature of conscious processes is that they have the ability to assess how well each option in a choice set contributes to the pursuit of a goal (Laran et al., 2016). An intended outcome can often be reached from different initial conditions and by a variety of combinations of resources, and two or more combinations of resources can be equally effective in achieving high performance. On this basis, assessment increases an actor's ability to choose an optimal pathway to achieving an intended value outcome. Competencies are often seen as innate or accomplished through challenging and lengthy training (Mitchell and Daniels, 2003). Through focused and repetitive practice and training, non-conscious resource integration becomes an automated version of conscious resource integration. The findings of Findsrud and Tronvoll (Paper 3) showed that with exceptional competencies, an actor can effectively perform progressively complex non-conscious dominant resource integration. Thus, *resource integration can dominantly rely on conscious or non-conscious processes.*

5.3 Revisiting resource integration outcomes

Findsrud et al. (2018: 507, Paper 2) demonstrated two types of perspectives that emerge from resource integration:

> A subject-oriented perspective focuses on the subjective experience of the actor from the resource integration (Peters et al., 2014). In this case, the subjective experience can be linked to the value outcome, which is the actor's perception of value-in-use derived from the specific resource integration process. […] However, if the scholar adapts a more object-oriented perspective, the main assumption would be that the resource integration outcome is an objective, observable, and measurable phenomena (Peters et al., 2014) […] where the outcome of resource integration is new resources. Albert Einstein argued that energy cannot be created or destroyed, as it only changes from one form to another. Similarly, resources do not turn into value when used, they are transformed into new resources that can be used (Vargo and Lusch, 2011).

These new resources may form the basis for innovation when a system is capable of creating value (Edvardsson and Tronvoll, 2013). Customers are motivated by value proposition (Sweeney et al., 2015), which offers a goal for resource integration activities in that it provides motivation in the form of direction if an actor desires the proposed value. However, as implied in the previous section, achieving an intended value outcome is not necessarily limited to a single path. The

concept of equifinality implies that any intended outcome is reached under different preliminary circumstances and various combinations of resources; two or more combinations of resources may be equally effective for achieving high performance (Fiss, 2007). For example, if the goal is to get from A to B, a person can drive, take a bus, or walk—all constituting a way to fulfill the goal. The decision is influenced by disparate variables, such as distance, time, alternative routes between A and B, access to a car, knowledge about bus schedules, parking opportunities at location B, a parallel goal of exercising, or a lack of knowledge or uncertainty about any of these variables. Understanding how available resources can be combined and their emergent nature can thus be expected to increase both the likelihood of achieving intended value outcomes and the effectiveness of instrumental resource-integrating activities.

The following sentiments were shared by Findsrud et al. (2018: 508, Paper 2):

> If the experience from resource integration is perceived as positive and confirms expectations, it can evoke feelings of competence in action and thus enhance intrinsic motivations for that action (Ryan and Deci, 2000b) and institutionalize resource integration activities to become habitual or nonconscious. Through these experiences, actors create, maintain, or disrupt resource integration practices and, thus, institutions for future resource integration.

Because resource integration can involve behaviors influenced by multiple systems on multiple levels of aggregation within multiple value co-creation processes (Laud et al., 2015; Jaakkola and Hakanen, 2013), actors may also have multiple goals at multiple levels. This statement is supported by achievement goal theory in educational psychology, wherein students have empirically demonstrated to pursue multiple goals, both social and academic, at school (Wentzel, 2000). Individuals are likely to pursue more than one goal in a particular situation (Wentzel, 2000); they can, for instance, balance long- and short-term goals or increase efficiency while pursuing explorative activities (Findsrud and Tronvoll: Paper 3). Expectancy theory maintains that time to value attainment diminishes motivational effects (Steel and König, 2006) and that actors are more strongly motivated to act according to contextual institutions than attain a more distant value outcome. Consequently, specific resource integration events that enhance the accomplishment of some value outcomes might exert no effect on the accomplishment of others and even detract from the achievement of still other goals (c.f., Motowildo et al., 1997). This phenomenon is further clarified by an earlier discussion on resource integration's reconciliation of the duality between personal and social influence on activity. As described earlier, social influences operate through psychological mechanisms and thereby generate behavioral effects (Bandura, 2001b). Contexts regulate motivation when people grasp its meaning and synthesize this meaning in relation to their other goals and values (Ryan and Deci, 2000b). Even witnessing another similar to oneself succeed owing to perseverance reinforces observers' confidence in their own abilities

(Bandura, 2009). The assumption that *resource integration is always part of multiple value co-creation processes and assessed from multiple levels of aggregation* is supported by the studies in the appended papers, and no change to the assumption is needed.

Resource integration is difficult to predict because it is influenced by a vast number of factors. As we zoom out, complexity increases exponentially, and if we try to understand resource integration from a meso or macro level, many of the choices made by actors may not make sense. Thus, to understand resource integration, we must understand the microfoundations of the construct. Theoretical microfoundations are important in illuminating how individual-level factors impact value outcomes, how the interaction of actors leads to emergent and collective value co-creation outcomes, and how relationships between macro variables are mediated by resource integration actions and interactions (see Hollebeek et al., 2019; Felin et al., 2015). Through the development of the first appended paper, Findsrud and Dehling (2019: Paper 1) discovered that resource integration is a highly suitable microfoundational platform, with the resource integration literature and microfoundation studies discussing many of the same phenomena and mechanisms, only using different labels for entities (see Table 7 for examples).

Microfoundational research is aimed at breaking down macro-level constructs regarding interactions between actors at different levels (Baer et al., 2013; Foss and Pedersen, 2016). To understand how service innovation emerges, an important requirement is to emphasize the need to specifically grasp the unique, interactional, and collective effects that are not only additive but also emergent (Barney and Felin, 2013). Barney and Felin (2013) added that microfoundations enable a systematic scrutiny of how choices and interactions create structure, the behavior of individuals within structures, and the role of individuals in shaping the evolution of structures over time. Hence, microfoundations are a way of looking into the origins and nature of the macro (Barney and Felin, 2013).

The results presented in Paper 4 indicated that change may come proactively or reactively through creative resource integration and adaptive resource integration. Accordingly, service innovation arises from improvements in (1) efficiency, wherein the same valuable outcome is achieved by improving resources utilization (e.g., innovation in service delivery platforms), (2) effectiveness, through the creation of new valuable outcomes (e.g., new service development), or (3) a combination of the two. The extent of change or newness required for it to count as an innovation has been a point of discussion in the innovation literature (Fuglsang and Sørensen, 2011; Witell et al., 2016). Change must be an influence on (economic) development; it must be repeatable, significant, or radical; and it should aggregate to a higher level for it to evolve into an innovation (Fuglsang and Sørensen, 2011). Innovation is distinguished from creativity by the implementation, rather than the mere generation, of ideas (Sarooghi et al., 2015). Creativity is the generation of novel and useful ideas (Sarooghi et al., 2015) and is aligned with characteristics such as broad

interests, intuition, attraction to complexity, aesthetic sensitivity, toleration of ambiguity, and self-confidence (Oldham and Cummings, 1996). Researchers generally recognize that an individual's competencies supply one part of the creativity equation and the other part as fulfilled by motivation (Burroughs and Mick, 2004). This perspective corresponds with the literature on resource integration, wherein motivated actors use competencies to integrate resources (Findsrud et al., 2018).

Gustafsson et al. (2020: 114) defined *service innovation* as "a new process or offering that is put into practice and is adopted by and creates value for one or more stakeholders." New processes or offerings result from creative resource integration activities. These new processes may not be considered innovative at a given moment but may in retrospect be evaluated as innovative if practices aggregate (Findsrud: Paper 4) and provide value at higher levels of aggregation (Gustafsson et al., 2020). Consistent with this reasoning, then, *creative resource integration that aggregates—meaning practiced, adopted by, and creates value for one or more involved actors—becomes service innovation.*

5.4 Theorizing about resource integration

Good and insightful articles that theorized about resource integration on the basis of resources and how these combine have been published (e.g., Peters et al., 2014; Peters, 2016; Kleinaltenkamp et al., 2012). This thesis further contributes to the theorization of resource integration by examining actors as resource integrators and the mechanisms of how and why they integrate resources. Answering the research questions required finding the "cogs and wheels" (cf. Hernes, 1998) that fit in the machinery of resource integration, that is to say, identifying the constructs that drive and enable resource integration and how these interact. Using a machine as a metaphor for resource integration is not really suitable owing to the dynamic nature of resource integration. A more fitting one would be water flowing down a mountain, reflecting the ability to adapt to terrain while simultaneously changing entire landscapes with time. The findings in the four appended papers and this thesis put forward a framework that clears the path for explaining the dynamism of resource integration. Further, because knowledge is mostly linguistic (Easton, 2002), this thesis contributes to a more robust lexicon for communicating and further theorizing about resource integration.

With the earlier discussions in the thesis as basis, we can summarize resource integration, at its core, as actors using resources, with use pertaining to the behavioral and cognitive application of

resources (Findsrud et al., 2018: Paper 2). Resources refer to anything (e.g., energy, capabilities, assets)—tangible or intangible, internal or external, operand or operant—that an actor can draw on for increased viability (Lusch and Vargo, 2014). These resources, however, proffer merely potential value and *become* only through how they are used. Specifically, actors have different proficiencies in realizing value, depending on their ability to use the right resources correctly at the right time, given the dynamic nature of contexts (Findsrud and Tronvoll: Paper 3). Resource integration can be seen as an activity or a process, in which the use of resources creates new resources (e.g., increased competencies) in a never-ending emergent process. Prerequisites and outcomes analytically mark a start and an end to a process, wherein the outcome of resource integration can be subjectively evaluated as value co-creation. The results in the appended papers implied that integration of resources in dynamic and unpredictable contexts depend on similar underlying mechanisms as service innovation. Service innovation is the outcome of a resource integration process, wherein new routines for integration resources (i.e., practices) are discovered and adapted by other actors (i.e., aggregates to a higher analytical level).

Moving toward a theory of resource integration is possible, as evidenced by the discussion of the assumptions in the previous section. The process of theorizing is the development of theory through "statements of concepts and their interrelationships that show how and/or why a phenomenon occurs" (Gioia and Pitre, 1990: 587; see also Peters et al., 2014: 252). This thesis realized its aim of theorizing about resource integration by exploring actors integrating resources on the grounds of dynamic contexts and service innovation as empirical domains. Through a set of statements (Table 10), this thesis designed a framework for formulating a theory of resource integration and linking resource integration to service innovation.

As Table 10 indicates, the most significant change in assumptions about resource integration has to do with the focus and implementation of drivers. It still highlights the operation of interactive actors in a service ecosystem, and resource integration is the micro-level value creating activities in value co-creation processes, in which the outcome of resource integration activities may be assessed from a micro, meso, or macro perspective. The revised assumptions of resource integration theoretically explain the mechanisms of how the prerequisite factors drive and enable actors' integration of resources.

Table 10. Summary of general assumptions revisited

Previous number		Assumptions about resource integration	Number	Revised or new assumptions about resource integration	Comments
1		Operant resources are fundamental for resource integration and essential for value realization.	1	Operant resources are fundamental for resource integration and essential for value realization.	No change, but important to emphasize the conceptual scope of operant resources to include motivation.
2		Resource integration is driven by the activities of actors through their operant resources.	2	Resource integration is performed by actors through their operant resources that entail both enablers (e.g., competences) and drivers (e.g., motivation).	The revised assumption highlights both the drivers and enablers of resource integration.
3	Prerequisite resources	Institutions and institutional arrangements (i.e., a set of institutions) guide the direction of an actor's resource integration activities.	3	Actors' motivation to integrate resources is the phenomenological assessments of intrinsic motives, moderated by the social context through institutional arrangements.	Institutions guide actors through motivation.
4		Resource integration affects and is affected by contexts and service ecosystems.	4	Resource integration affects and is affected by contexts and service ecosystems.	No change
5		Resource integration is affected by the accessibility of necessary resources in engaged actors' context.	5	Resource integration is affected by the accessibility of necessary resources in engaged actors' context.	No change
			6	Agility is a key competence for resource integration in dynamic and changing contexts	Contexts are dynamic, implying that actors must adapt to maintain performance.
			7	Creative resource integration represents significant positive shifts in value realization.	Creative resource integration may arise proactively or reactively.
6		Resource integration involves using and interacting with resources, including other actors.	8	Resource integration involves using and interacting with resources, including other actors. The process of combining resources provides feedback to involved actors, thereby influencing their motivation and positively affecting their competencies.	Resources may also include other actors and are encompassed to avoid ambiguity. The influence of feedback on motivation and competencies is also implicated in the assumption.
7	Activity	Value realization is shaped by the effectiveness and efficiency of resource integration activities.	9	Value realization is shaped by the multidextrous balancing of explorative and exploitative resource integration with the effectiveness and efficiency of resource integration activities.	The findings in Paper 3 showed that effectiveness and efficiency must be extended with exploration and exploitation to encompass performance.

Previous number		Assumptions about resource integration	Number	Revised or new assumptions about resource integration	Comments
			10	Resource integration can dominantly rely on conscious or non-conscious processes.	*Conscious* can also refer to human-dominant; *non-conscious* can also refer to technology-dominant, depending on the context and scope of analysis.
8		Resource integration is always part of multiple value co-creation processes and is assessed from multiple levels of aggregation.	11	Resource integration is always part of multiple value co-creation processes and is assessed from multiple levels of aggregation	No change
	Outcome		12	Creative resource integration that aggregates—meaning practiced, adopted by, and creates value for one or more involved actors—becomes service innovation.	Aggregation entails practices spreading to a higher level, meaning moving from the micro toward the macro and involving putting into practice, being adopted by, and creating value for one or more involved actors.

RQ1 is a query on what mechanisms drive and enable actors to integrate resources. This question was answered in Findsrud et al. (2018), where we defined *resource integration* as actors' use of competence in emerging interactions, driven by motivation and enabled by available resources. Summarizing the conceptualization of resource integration in this thesis and identifying the characteristics of activities that result in successful resource integration (RQ2) require an extended explanation of resource integration. Correspondingly, resource integration includes the performance of competence-enabled behavioral and cognitive activities, driven proactively and reactively by motivation, through a multidextrous juggling of the quest for effectiveness and efficiency with explorative and exploitative activities to achieve value co-creation. The second half of the statement answers to RQ2. Furthermore, if creative ways of integrating resources aggregate to a higher level, then the process is labeled *service innovation*. Throughout the entire resource integration process, feedback from contexts and activities inform the actor, thus increasing his or her level of experience and strengthening the actor's competencies. All aspects throughout the process influence and are influenced by conditions of the service and social context. Service innovation occurs when learning leads to a change in practice at a higher level of aggregation. This process is depicted in Figure 11.

Figure 11. Integrative conceptual framework for resource integration

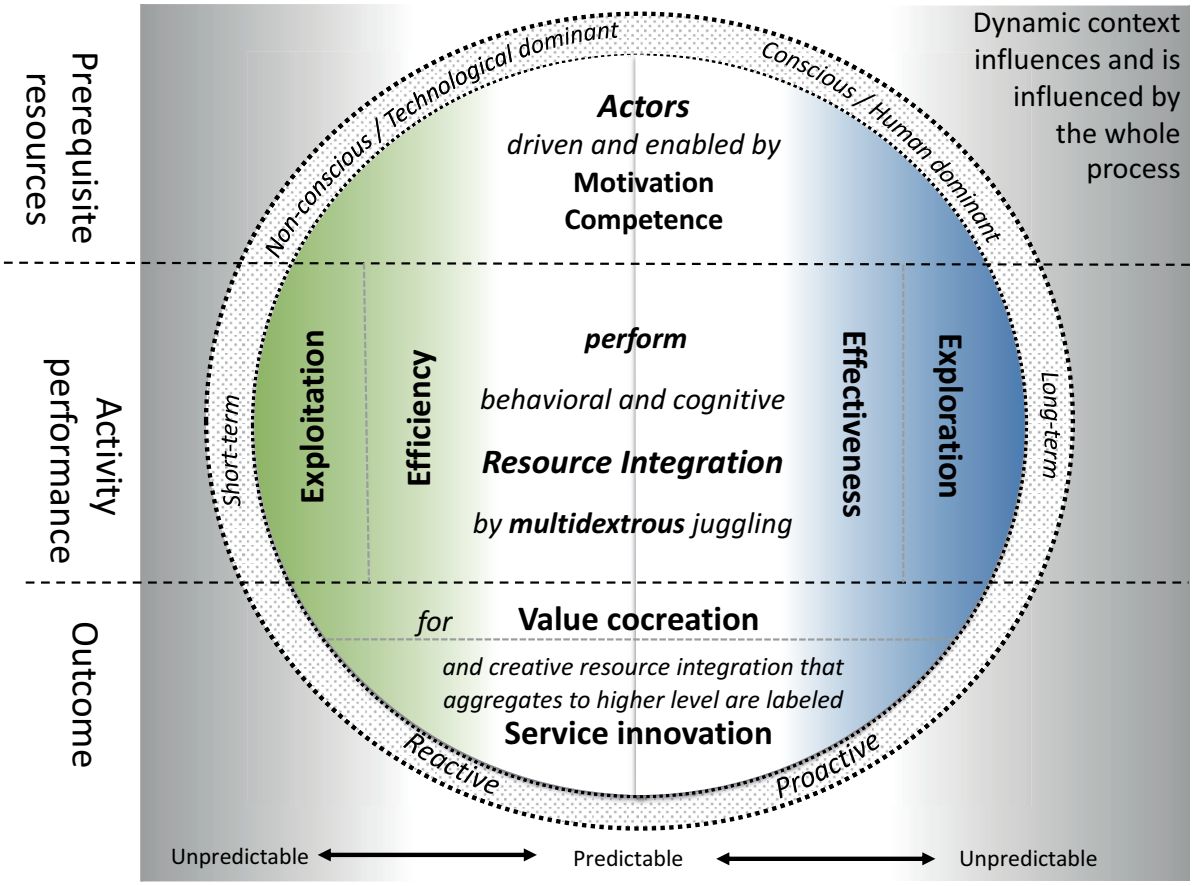
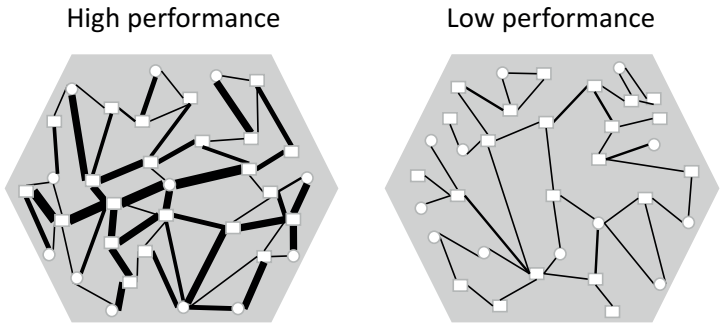


Figure 12. Difference in high and low performance



As actors engage in resource integration activities, resources are transferred between activities that link them in a system. Comparable to computers that are linked and send data back and forth, resource integration creates resources that move within systems. The performance of resource integration activities is the sum of transferred resources in a system in accordance with its potential, as portrayed in Figure 12. The thicker the line, the greater the effect between resource integration activities. A high-performance situation is typified by more connections and/or thicker connections, so the sum of transferred resources is higher than that realized in a low-performance situation, which comprises fewer connections and/or a weaker effect between activities, resulting in a lower total quantity of transferred resources.

The prerequisite resources require processes that are predominantly non-conscious or conscious, depending on an actor's level of experience, the dynamic or predictable nature of a context or activity, and the complexity of a task. The motivation to engage in resource integration may be proactive or reactive, wherein an actor performs behavioral and cognitive activities (Findsrud: Paper 4). How well the actor performs resource integration is determined by the multidextrous balance of exploration and exploitation with the pursuit of effectiveness and efficiency (Findsrud and Tronvoll: Paper 3). In dynamic and unpredictable situations, actors should focus on exploration and exploitation, but in predictable circumstances, concentration should be directed toward effectiveness and efficiency. The predictability of a situation is illustrated in Figure 11 through the gradience of the background. As one moves away from the vertical center line, predictability diminishes, indicating the movement of actors from a predictable realm to a dynamic one (Findsrud and Tronvoll: Paper 3). By performing resource integration, an actor co-creates value from a holistic perspective. From an objectively oriented perspective of resource integration, this process always leads to new resources in an ongoing process (Findsrud et al., 2018). The value of resource integration is phenomenologically determined by an actor and creative (i.e., new, novel, and useful) ways of integrating resources deemed valuable at a higher level. Thus, aggregates become service innovation (Findsrud and Dehling, 2019: Findsrud, Paper 4).

5.4.1 The left versus right hemispheres

Dividing Figure 11 down the middle into two symmetrical parts presents a left and a right hemisphere. Similar to a human brain having two sides that control disparate tasks, the left and right hemispheres of the figure differ and rely on distinct perspectives on resource integration concerning modes of resource integration, time horizon, and approach to activities in a context.

The left hemisphere relies on non-conscious dominant processes[14] that focus more strongly on short-term outcomes and is mostly reactive in approach. Conversely, the right hemisphere depends on conscious dominant processes and long-term outcomes and is more proactive in nature.

[14] Non-conscious dominant and conscious dominant can also be descried as technology-dominant and human-dominant, repectively, depending on type of actor, where the former terminology is suggested regarding actors as individuals and the latter in reference to organizations or groups of individuals. This is elaborated in section 5.4.1.1.

5.4.1.1 Conscious and non-conscious resource integration

The process view of S-D logic accentuates the need to view actor relationships as activities performed partly deliberately and partly non-consciously (Payne et al., 2008). Despite the increasing interest in resource integration, an important research gap remains with respect to how and why actors integrate resources and, in particular, non-conscious resource integration and its conceptual connections to motivation, goal pursuit, emotions, and institutions within S-D logic. This deficiency has restrained our understanding of resource integration.

Non-conscious resource integration is defined as the behavioral and cognitive use of competencies outside an actor's phenomenal awareness and *conscious resource integration* as the behavioral and cognitive use of competencies within such awareness. Most resource integration activities of customers are mundane, everyday tasks performed in a spontaneous, more or less non-conscious manner (Edvardsson et al., 2011; Grönroos and Voima, 2013; Findsrud et al., 2018: Paper 2), and conscious resource integration occurs only when difficulty, novelty, and motivation come together to command the resources of working memory (Evans and Stanovich, 2013). Thus, most behaviors are under autonomous control, and rapid, default responses are prompted in most situations (Evans and Stanovich, 2013).

This separation between conscious and non-conscious resource integration is also applicable to organizations as a unit of analysis. In this case, conscious resource integration is represented by *human-dominant* orientation (i.e., individuals in an organization), whereas non-conscious resource integration is represented in the automated systems and computers that an organization utilizes to become more effective in their operations, or what is called a *technology-dominant* orientation (Figure 11). Repetitive resource integration activities or simplistic resource integration processes with high predictability are often the focus of process automatization. For instance, the banking and financial services industry has undergone a major digitalization process, with most offerings available through self-service over online and mobile banking. This move stemmed mainly from a focus on efficiency regarding time saving for frontline employees and an extension enabling frontline workers to prioritize more important tasks. The automatization of processes, or parts of processes, enables an actor to concentrate on other activities that are considered more important for performance or ensures that an actor operates rapidly enough to meet requirements. In parallel with O'Reilly III and Tushman (2013) recommendation on structurally separating subunits for engaging in either exploration or exploitation, the human mind is already equipped with subunits concerning consciousness and non-consciousness (Evans and Stanovich, 2013).

The findings in Paper 3 indicated that an automatization of processes increases efficiency as regards the time conservation discussed in the preceding paragraph. Similarly, BJJ competitors

talk about automating movements to the point of these maneuvers becoming non-conscious (Findsrud and Tronvoll: Paper 3). A substantial part of resource integration can only be explained by assuming that actors use both conscious and non-conscious resource integration in dynamic interaction. Hence, resource integration is characterized by a ratio of conscious to non-conscious resource integration ratio. Accordingly, resource integration processes can exist on a scale of consciousness, from non-conscious dominant resource integration to its conscious dominant equivalent. The *consciousness of resource integration* is defined as the degree to which the resource integration process is dominated by behavioral and cognitive activities that are performed amid an actor's phenomenal awareness.

5.4.1.2 Long term versus short term

To increase efficiency, an actor can use a short-term strategy for minimizing cost, which means adopting technology to automate processes. However, automated processes have moved customers away from the frontline (Findsrud and Tronvoll: Paper 3). On one hand, banks are pushing customers away from physical bank locations in the provision of daily banking services; on the other hand, financial advisors are requesting customers to join them in meetings. This contradiction might result in a digitalization paradox, wherein the pursuit of efficiency may strongly reduce long-term effectiveness (cf., Sjödin et al., 2020). Many of the changes made to simplify operations for customers often involve increasing complexity for banks (e.g., multiple platforms, systems). Similarly, simplifying for a bank often increases complexity for a customer (e.g., online loan applications and online banking requiring customers to do more work themselves). As Findsrud and Tronvoll (Paper 3: 15) argued,

> Actors that engage exclusively in exploration activities are likely to accumulate the costs of experimentation without many of the benefits (March, 1991). Arguably, exploration has no direct effect on short-term performance because it is designed to facilitate long-term performance (Monferrer Tirado et al., 2019). Firms therefore exhibit a natural bias toward exploitation because of the greater certainty of short-term gains (Groysberg and Lee, 2009; Gupta et al., 2006). However, as repetition and incremental improvement of established practices can increase efficiency (Benner and Tushman, 2002), actors need to balance exploitation of existing resources and exploration of the potential of additional activities and resources (O'Reilly III and Tushman, 2013; De Ruyter et al., 2020; March, 1991). Effectiveness and efficiency is built on previous exploration and exploitation, indicating a need to move from single-focus to multidextrous thinking, juggling effectiveness, and efficiency with explorative and exploitative activities.

5.4.1.3 Reactive versus proactive

Traditionally, many organizations use a proactive approach whereby they attempt to create strategies that anticipate future developments, rendering these occurrences more predictable (Prange and Hennig, 2019). With current developments (Bolton et al., 2018) and unpredictable

and disruptive events (e.g., Covid-19), however, organizations must deal with complexity and uncertainty, in which case an agile approach offers a tool for coping with unpredictability and changing preconditions (Prange and Hennig, 2019: see also Findsrud, Paper 4). Mintzberg and Waters (1985) distinguished between deliberate strategies, which are realized as intended, and emergent strategies, which are implemented despite or in the absence of intention. These approaches are distinguished precisely by adaptability. Adaptation and openness to emergence require a willingness to change. Amid a dynamic and unpredictable context, a variety of actors in an organization must be able to respond to it (Mintzberg and Waters, 1985). Such a response requires a level of congruence in actors' goal priorities to adapt quickly to changes.

5.4.2 Resource integration leading to service innovation

RQ3 centers on what mechanisms drive and enable actors to achieve service innovation, which occurs when learning that takes place culminates in a change in practice at a higher level of aggregation. This translates to the possible occurrence of inventions and creative changes at any part or stage in the resource integration process (Figure 11). These occurrences become service innovation by aggregation, denoting that the difference between creative resource integration and service innovation lies in implementation, aggregation, and time. On the basis of the arguments elaborated above, I can define *service innovation* as creative resource (re)combination (Witell et al., 2017: 290; see also Gallouj and Weinstein, 1997; Lusch and Nambisan, 2015) that aggregates to a higher level (Fuglsang and Sørensen, 2011). Accordingly, an important part of resource integration is to step out of one's comfort zone into experimentation territory (Findsrud and Tronvoll: Paper 3). Study 4 presented several examples of bricolage behavior in everyday life in companies. In fact, minimal difference exists between the underlying mechanisms of how actors integrate resources in dynamic contexts, that is, relying mainly on exploration and exploitation, and the quest for service innovation. As a means of unraveling RQ3, therefore, we can move away from the vertical center line in Figure 11 into the dynamic realm (Findsrud and Tronvoll: Paper 3) to find the mechanisms that drive and enable service innovation. The results documented in Paper 4 suggested that companies are better off focusing on involved actors and activities rather than planning for an innovative outcome. When actors use their creativity and adaptability in integrating resources to face and accommodate market requests and needs, they increase their possibility of being considered innovative. Motivation guides the focus of attention and enables attention to detail in context and may thus increase the accessibility of resources. Creativity augments the equifinality of available resources in achieving some intended outcome through the

number of paths or ways by which resources can be combined. In a service innovation context, a service provider needs the ability to be creative and agile in adapting and recombining resources that match the needs of a customer. This readiness to change must be scaled beyond R&D across an entire organization (Holbeche, 2019).

5.4.3 Key concepts and terminology revisited

I started this thesis by listing the key concepts that represent the conceptual starting point for the research. Given that the lexicon and vocabulary used to explain phenomena are important, I summarized all the definitions of these concepts in Table 11, thus contributing to the development of a more robust lexicon through a reframing of previously proposed concepts and reconciling differences in language (Vargo and Lusch, 2017). The definitions provide a language for discussion, and S-D logic needs distinct definitions that are operationalizable to study relationships between core concepts. Moreover, it is an important step in the process of developing measures for concepts (MacKenzie et al., 2011). Finding the right labels and phrases helps us think and conceptualize afresh (Kohli, 2006), which is crucial to the theorization process. The sum of the definitions adds to theorizing anchored in S-D logic.

Table 11. List of key concepts with definitions

Concept	Definition
Resource integration	Actors' use of competence in emerging interactions, driven by motivation and enabled by available resources (Findsrud et al., 2018: 512)
Value co-creation	Resource integration of multiple actors, often unaware of one another, that contribute to one another's well-being (adapted from Vargo and Lusch, 2008a; 2016)
Service innovation	A creative resource (re)combination that aggregate to a higher level (adapted from Witell et al., 2017; Fuglsang and Sørensen, 2011)
Actors	Individuals or formal or informal organizations, such as firms, peer groups, families, or pressure groups (Edvardsson et al., 2014)
Motivation	An actor's motivation to integrate resources is a set of energetic forces originating both within the actor and from the (social) context, to initiate resource integration and determine its direction, intensity, and persistence (Findsrud et al., 2018: 505).
Competencies	Knowledge and skills that enable actors to integrate resources effectively (Findsrud et al., 2018: 496)
Resource integration performance	An actor's observed ability to create value by multidextrous balancing of explorative and exploitative activities in pursuit of effectiveness and efficiency when using the available resources in a given context (Findsrud and Tronvoll: Paper 3)
Multidexterity	An actor's ability to simultaneously perform more than two tasks to achieve different and multiple objectives (Ritter and Geersbro, 2018)
Resource integration effectiveness	The accomplishment of intended outcomes through scheduling and resoluteness (Findsrud and Tronvoll: Paper 3)
Resource integration efficiency	The ability to accomplish the intended value outcomes with maximum accuracy, simplicity, and automation (Findsrud and Tronvoll: Paper 3)
Explorative resource integration	The use of resources to acquire new resources through searching and learning (Findsrud and Tronvoll: Paper 3)
Exploitative resource integration	Maximizing realization of the value of available resources by utilizing and reusing existing resources (Findsrud and Tronvoll: Paper 3)
Agile resource integration	Actors' readiness to quickly find creative ways of using and combining available resources in context, proactively or reactively embracing the iterative emergence of co-created value (Findsrud: Paper 4)
Creative resource integration	Experimenting and reusing resources and practices in new contexts for the purpose of improving value creation (Findsrud: Paper 4)

Only fools are sure of anything; a wise man keeps on guessing.

–MacGyver

6 Limitations and future research

To recapitulate, this thesis intended to theorize about resource integration through an examination of actors using dynamic contexts and service innovation as empirical domains. We are on our way to theoretically understanding resource integration through the integrative framework presented in the previous chapter. This framework extends the conceptualization of resource integration; nevertheless, it also raises many new questions. There are several limitations to this thesis, and much more work needs to be done to fully (if at all possible) understand resource integration and service innovation. Hopefully, future research can build on the findings of the current work and further develop the proposed framework. It is hoped, as well, that research on resource integration and service innovation can develop unique contributions to marketing.

The first limitation of the proposed framework is the fact that it was not empirically contextualized and validated in a quantitative study. For instance, what was supposed to be a quantitative investigation of resource integration performance instead gave way to an explorative study that enabled the development of a conceptual framework constrained in terms of generalizability. Other researchers should conduct quantitative studies in multiple contexts to empirically validate the frameworks in the appended papers and the integrative framework put forward in this thesis; these are valuable directions as the next phase in the process of scale development is to generate a set of items that fully represent the conceptual domain of the construct (MacKenzie et al., 2011). Moreover, many links within the framework deserve attention and further theorization. Effectiveness and efficiency have frequently been researched, as have exploration and exploitation, but other combinations have not been discussed. Possibilities in this respect include the combination of effectiveness and exploration, effectiveness and exploitation, efficiency and exploration, and efficiency and exploitation, which represent exciting avenues for further theoretical elaboration and empirical testing.

Study 4 is limited in its trustworthiness as it was based solely on interview data from a relatively small sample, thus highlighting the need to validate the findings against other contexts and with other types of data, such as observations during meetings and workshops where actors work on innovative projects and preferably over extended periods of time. Oertzen et al. (2020) examined the commonalities of three personas likely to engage in co-creation and three anti-personas

unlikely to do so. Performing a similar study in relation to service innovation and agile organizations can provide insight into combinations of personas that are likely to be agile and achieve successful service innovation.

The differences between conscious and non-conscious resource integration have yet to be explored with reference to S-D logic. This deficiency signifies the necessity of increased attention to both the conscious and non-conscious drivers of resource integration and accordingly expand the understanding of value co-creation processes. This presents two interesting directions for further research: first, studies on the human mind and the dualities of processes occurring in the conscious and non-conscious domains of the brain, and second, explorations into the frequent reliance of resource integration on an interplay between human and non-human actors (Storbacka et al., 2016), where non-human agents (e.g., service robots) actively control ordinary and routine tasks and interplay with humans in a service ecosystem (Corazza, 2016). The world is currently undergoing a fourth technological revolution that is unprecedented in scale, speed, and complexity (Bolton et al., 2018). Organizations are continuously adopting digital technologies, such as mobile, location-based, virtual reality, digital twins, blockchain, artificial intelligence, and wearable technologies, as well as neuroscience, business process automation, and machine-to-machine interactions (Bolton et al., 2018). Several industries are presently being revolutionized with robotization and machine learning, with these domains creating new and innovative services in the process. The importance of humans in the future is contingent on their "adaptive performance related to non-routine tasks, requiring flexibility of mind, capacity to take decisions based on incomplete information, intuition, problem solving ability, artistic and aesthetic sense: in a word, on their creativity" (Corazza, 2016: 259). Because resource integration is a context-dependent performance construct, wherein the context is dynamic and ever-changing, non-human actors require creative capabilities to become effective resource integrators. Runco and Jaeger (2012) referred to a standard definition of creativity as originality and effectiveness. Computational creativity, as defined by Colton and Wiggins (2012), in combination with the standard definition of creativity (Runco and Jaeger, 2012), is constituted by the philosophy, science, and engineering of computational systems which, by taking on particular responsibilities, exhibit behaviors that unbiased observers deem original and effective. Future research will benefit from probing into how the interplay between human and non-human actors that demonstrate computational creativity affects resource integration effectiveness.

The focus of this thesis was to understand the mechanisms of resource integration rather than identify a framework for predicting resource integration. However, a possible avenue for predicting resource integration can be found in the well-established motivation–opportunity–

ability (MOA) framework. Motivation, competencies, and accessibility may arguably be a tripartite way of predicting resource integration. The MOA framework was originally proposed by MacInnis and Jaworski (1989) and suggests that the degree to which individuals process information is based on three factors: motivation, opportunity, and ability (Gruen et al., 2005). *Opportunity* is a construct involving factors beyond an actor's control (e.g., exposure time, message length, the number of arguments in a message, and distractor thoughts evoked by competing messages), in contrast to ability, which comprises elements under an actor's control (e.g., knowledge and skills) (Batra and Ray, 1986). With the MOA framework, effects can be proactively managed by enhancing individuals' levels of MOA elements (Gruen et al., 2005; MacInnis et al., 1991), thus suggesting great value for managers in stimulating and facilitating resource integration with actors. Accordingly, I argue that resource integration is a function of an actor's competence, motivation, and access to other resources and that a motivation–competencies–accessibility framework can be a potential avenue for further research.

Resource integration is a complex concept that may involve both individual and collaborative behaviors and is influenced by context and multiple systems on multiple levels of aggregation across numerous value co-creation processes (Laud et al., 2015; Jaakkola and Hakanen, 2013). Thus, the valuation of resource integration processes can be assessed from a micro, meso, or macro perspective (Findsrud et al., 2018). Although this thesis discussed the systems perspective to a degree, more research is needed on resource integration that employs a systems approach, which enables the acknowledgment of the crucial implications of complexity (Barile et al., 2012). Wieland et al. (2012) posited that value from a resource integration activity is best determined by the viability of a system. Viability as a concept "integrates efficiency, effectiveness, and sustainability perspectives by stimulating business behavior and competitiveness based on value creation" (Barile et al., 2012: 62), and sustainability is an interesting avenue to pursue further regarding resource integration, both from resource and systems perspectives.

Considerable earlier research on agile approaches focused on small teams and systems, but this direction is reversed in IBM, where agile strategies have been applied to large teams of over a hundred people and throughout the entire software delivery life cycle (Ambler, 2009). Kruchten (2013) identified what is referred to as the "agile sweet spot," which consists of small, collocated teams working on small, non-critical, greenfield, in-house software projects with stable architectures and simple governance rules. The researchers found that projects outside the sweet spot are much more problematic. The findings in Paper 4 indicated that one of the large companies involved in the research was an agile one employing numerous employees. Thus, the

manner by which large systems can show agility, as seen with societies grappling with Covid-19, has potential for further research.

A final avenue worth mentioning is in relation to bricolage. An et al. (2018) found that bricolage is an important mediator of the relationship between creativity and innovation performance. Bricolage and creativity are conceptually related constructs attempting to explain similar mechanisms but have their conceptual heritages in different scientific fields, namely, anthropology and psychology. These ideas translate to potential research directions in integrating and distinguishing the bricolage and creativity literature. *Bricolage* is often referred to as a process of "making do with whatever is at hand by reuse and recombination" (Baker and Nelson, 2005: 333) and is intertwined with concepts such as experience, intuition, and improvisation (Fuglsang and Sørensen, 2011). A case in point is Cuba, where certain products are in short supply, compelling locals to replace them with whatever is at hand. Citizens have recently found many alternative uses for condoms, such as hairbands, plugs for punctured tires, use in fishing, and a tool for making wine (Sharkov, 2018). According to Witell et al. (2017), the capability to actively address resource constraints and improvising capability can improve service innovation outcomes. Furthermore, perception enables sensing needs and unutilized resources in a context (Ardichvili et al., 2003). Thus, a concept such as resource perceptivity, which involves sensitive insight and the phenomenological understanding of a context, may contribute to extending our understanding of how service providers create innovations and how customers adopt service innovations.

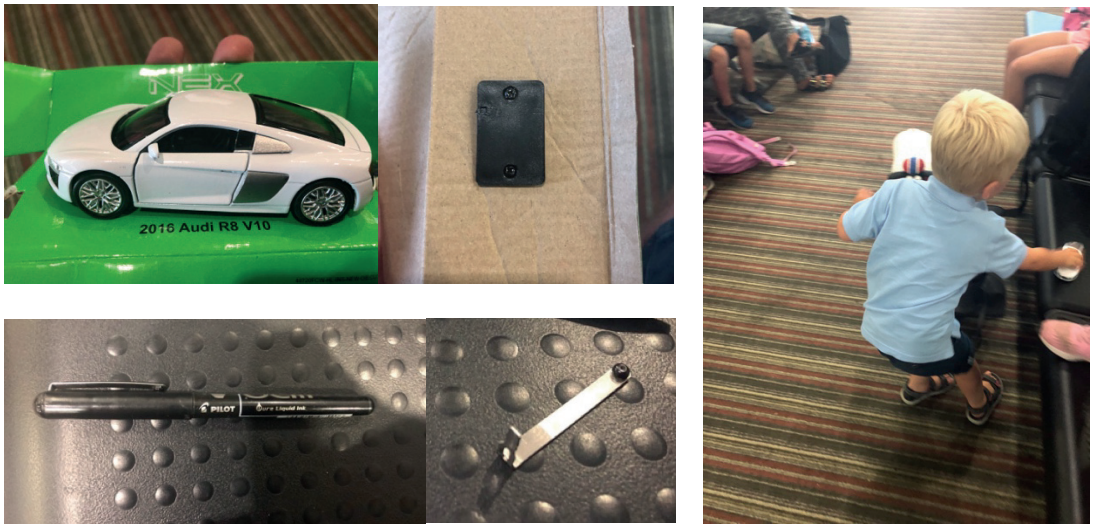
6.1 Final comments and reflections

This work was ambitious as each of its main concepts (i.e., resource integration, motivation, performance, agility, and service innovation) are substantial ideas that could have been a thesis in themselves. In this respect, the thesis provides the outlines of a framework that I can probably capitalize on to continue research for a decade or two. I have not chosen the easiest path to a PhD by aiming straight for the heart of S-D logic, but it has been a learning path unprecedented by anything else I have done in my life. If nothing else, I am today a much better researcher than I was when I initiated my PhD study. By zooming in on micro-level phenomena, we investigated elements that give energetic force that drives actors to perform activities. Similar to the body needing the heart to pump blood to the entire body for survival, service ecosystems need actors to execute resource integration to push resources throughout and bring life to an entire system. If we are to believe Drucker (1986: 49) that "the aim of marketing is to know and understand the customer so well the product or service fits him and sells itself" and the statement that marketing

and innovation are the main activities in a business, perhaps value creation is about understanding actors. That is, understanding actors so well that service innovations are not innovations as such but natural progressions toward the viability of service ecosystems. Thus, is there a difference in actors' adapting and changing their resource integration to confront dynamic contexts or innovating services, or are these tasks simply two sides of the same coin? Innovation is not about inventing things but about developing systems for value co-creation (Vargo and Lusch, 2017). In a complex and dynamic world filled with problems, being able to adapt to changing environments, being resourceful and creative, and solving problems under stress may be the most important abilities that actors need to face the unpredictable future. A recommendation for actors, then, is to think less about innovation and think more like MacGyver.

Epilogue

Back in the airport, I started thinking about what I could use to pacify my son, and I pondered over what I had around me that I could use. The Pilot pen in my backpack emerged as the tool of choice. I have had many pens of this brand during my school days, and I have taken apart and reassembled them probably thousands of times during classes (that were not always equally entertaining). Thus, I knew that the clip of the pen could be taken off and that the back part of that clip would probably fit in a screw of the car. And it did! One minute later, we had a happy boy playing with a toy car. We were all back to being happy. Well, as happy as one can be at an airport waiting for a delayed flight.



Photos: Private

> You must understand, most of these people are not ready to be unplugged. And many of them are so inured, so hopelessly dependent on the system that they will fight to protect it.
>
> *– Morpheus, The Matrix*

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Thesis articles separated with dividers

Appendix

Appendix 1: NSD Letter of Approval

Appendix 2: Information and Consent Form

Appendix 3: Interview guide paper 3

Appendix 4: Interview guide paper 4

Appendix 1: NSD Letter of Approval

NSD NORSK SENTER FOR FORSKNINGSDATA

NSD sin vurdering

Prosjekttittel

Resource integration performance

Referansenummer

409638

Registrert

02.01.2019 av Rolf Gunnar Findsrud - rolf.findsrud@inn.no

Behandlingsansvarlig institusjon

Høgskolen i Innlandet / Handelshøgskolen Innlandet - Fakultet for økonomi og samfunnsvitenskap / Institutt for reiseliv, opplevelsesnæringer og markedsføring

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Rolf Findsrud, rolf.findsrud@inn.no, tlf: 95729915

Type prosjekt

Forskerprosjekt

Prosjektperiode

01.01.2019 - 31.12.2022

Status

03.07.2019 - Vurdert

Vurdering (4)

03.07.2019 - Vurdert

NSD har vurdert endringen registrert 02.07.2019.

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet med vedlegg den 03.07.2019. Behandlingen kan fortsette.

OPPFØLGING AV PROSJEKTET
NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

Tlf. Personverntjenester: 55 58 21 17 (tast 1)

08.05.2019 - Vurdert

NSD har vurdert endringen registrert 29.04.2019.

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet med vedlegg den 08.05.2019. Behandlingen kan fortsette.

OPPFØLGING AV PROSJEKTET
NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

Kontaktperson hos NSD: Belinda Gloppen Helle
Tlf. Personverntjenester: 55 58 21 17 (tast 1)

07.02.2019 - Vurdert

NSD viser til endring registrert 07.02.2019. Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet med vedlegg den 07.02.2019. Behandlingen kan fortsette.

OPPFØLGING AV PROSJEKTET
NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til videre med prosjektet!

Kontaktperson hos NSD: Belinda Gloppen Helle
Tlf. Personverntjenester: 55 58 21 17 (tast 1)

04.01.2019 - Vurdert

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet med vedlegg den 04.01.2019. Behandlingen kan starte.

MELD ENDRINGER
Dersom behandlingen av personopplysninger endrer seg, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. På våre nettsider informerer vi om hvilke endringer som må meldes. Vent på svar før endringer gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET
Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 31.12.2022.

LOVLIG GRUNNLAG
Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering

er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake. Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER
NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke behandles til nye, uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER
Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20).

NSD vurderer at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER
NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET
NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

Kontaktperson hos NSD: Belinda Gloppen Helle
Tlf. Personverntjenester: 55 58 21 17 (tast 1)

NSD NORSK SENTER FOR FORSKNINGSDATA

NSD sin vurdering

Prosjekttittel

Service innovation

Referansenummer

947911

Registrert

02.05.2019 av Rolf Gunnar Findsrud - rolf.findsrud@inn.no

Behandlingsansvarlig institusjon

Høgskolen i Innlandet / Handelshøgskolen Innlandet - Fakultet for økonomi og samfunnsvitenskap / Institutt for reiseliv, opplevelsesnæringer og markedsføring

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Rolf Findsrud, rolf.findsrud@inn.no, tlf: 95729915

Type prosjekt

Forskerprosjekt

Prosjektperiode

01.05.2019 - 31.12.2022

Status

06.05.2019 - Vurdert

Vurdering (1)

06.05.2019 - Vurdert

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet den 06.05.2019 med vedlegg, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan starte.

MELD VESENTLIGE ENDRINGER
Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde:

https://nsd.no/personvernombud/meld_prosjekt/meld_endringer.html

Du må vente på svar fra NSD før endringen gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET
Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 31.12.2022.

LOVLIG GRUNNLAG
Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake. Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER
NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke behandles til nye, uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER
Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20).

NSD vurderer at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER
NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET
NSD vil følge opp underveis (hvert annet år) og ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet/pågår i tråd med den behandlingen som er dokumentert.

Lykke til med prosjektet!

Kontaktperson hos NSD: Mathilde Hansen
Tlf. Personverntjenester: 55 58 21 17 (tast 1)

Appendix 2: Information and Consent Form

Vil du delta i et forskningsprosjekt om bank og finanstjenester?

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å kartlegge hva som muliggjør og driver effektive og verdiskapende tjenester innen bank og finans. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål
Formålet med studien er å definere effektivitet og hva som er en god presentasjon innen ulike kontekster, hvor bank- og finanstjenester er en av kontekstene. Studiet er en del av doktorgraden til prosjektleder Rolf Findsrud.

Hvem er ansvarlig for forskningsprosjektet?
Høgskolen innlandet er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?
Du blir spurt om å delta siden du er eller har vært ansatt i bank eller bedrift som tilbyr finansieringstjenester.

Hva innebærer det for deg å delta?
Deltakelse i prosjektet innebærer å stille til intervju. Intervjuet er som regel ca en time, og vil omhandle tema som hva som kjennetegner en god rådgiver, hva kjennetegner en bra bedrift i bransjen, digitalisering og effektivitet. Det vil bli gjort lydopptak av intervjuet.

Det er frivillig å delta
Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykke tilbake uten å oppgi noen grunn. Alle opplysninger om deg vil da bli anonymisert. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger
Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

- Det er kun personer inkludert i prosjektgruppen som kan få tilgang til data, og tilgangen styres av prosjektleder. Det er primært prosjektleder som vil stå for all innsamling og bearbeiding av data.
- Lydopptaket blir slettet så snart det er transkribert eller ved prosjektslutt. Transkriberingen vil være anonymisert.
- Navnet og kontaktopplysningene dine vil jeg erstatte med en kode som lagres på egen navneliste adskilt fra øvrige data. Dataene lagres på en sikret datamaskin og er anonymisert så snart mulig.

Deltakere vil ikke kunne bli gjenkjent i publikasjoner basert på datamaterialet.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?
Prosjektet skal etter planen avsluttes 31.12.2022. Ved prosjektslutt slettes alle data som inneholder personopplysninger samt lydopptak. De dataene vi sitter igjen med er helt anonyme og oppbevares for å sikre etterprøvbarhet.

Dine rettigheter
Så lenge du kan identifiseres i datamaterialet, har du rett til:
- innsyn i hvilke personopplysninger som er registrert om deg,
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?
Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra *Høgskolen innlandet* har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?
Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:
- *Høgskolen innlandet* ved *Rolf Findsrud: rolf.findsrud@inn.no eller 95729915.*
- Vårt personvernombud: NSD – Norsk senter for forskningsdata AS
- NSD – Norsk senter for forskningsdata AS, på epost (personverntjenester@nsd.no) eller telefon: 55 58 21 17.

Med vennlig hilsen

Rolf Findsrud

Prosjektansvarlig

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet, og har fått anledning til å stille spørsmål. Jeg samtykker til:

☐ å delta i intervju

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet, ca. *31.12.2022*

(Signert av prosjektdeltaker, dato)

Are you interested in taking part in the research project "Resource integration Performance in Brazilian Jiu Jitsu"?

This is an inquiry about participation in a research project where the purpose is to develop a framework for defining and measuring performance within different contexts, and Brazilian Jiu-Jitsu is one of the contexts. In this letter we will give you information about the purpose of the project and what your participation will involve.

The interview will be recorded, and we must accordance with data protection legislation provide you with the following information of data processing. Please read carefully.

Purpose
The overall purpose of the research project is to understand how to define measure performance within different contexts where actors are integrating their resources to achieve something valuable.
The research project is part of the phd-education of Rolf Findsrud at Inland Norway University of Applied Sciences.

Who is responsible for the research project?
Inland Norway of Applied Sciences

Why are you being asked to participate?
You are practitioner in the context of the research project with a minimum rank of blue belt, or has competed in the sport.

What does participation involve for you?
Participating will imply partaking in an interview. The interview will be about one hour long, and cover the following topics:

- Defining performance from different perspectives
- Digitalization and Brazilian Jiu-Jitsu

The interview will be recorded.

It is voluntary to participate
It is voluntary to participate. You can at any time within the project period withdraw without a reason.

Your personal privacy – how we will store and use your personal data
We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act). The personal data that will be collected is your name, in addition to the interview being recorded.

- The recording of the interview will be deleted as soon as it is transcribed, or by the end of the project period. The transcribed interview will be pseudonymized.
- All data is securely stored in a computer that is protected with password, and it is only members of the project group that has access to the data. All data is pseudonymized to ensure no names or contact information is connected to answers. Any names will in the transcribed

interview will be removed. The recording or transcribed interview will use a code (a scrambling key) to ensure your name is not connected with data. The scrambling key is stored separately from the data and is encrypted with a password.

- Participants will remain anonymous and cannot be identifies in any publications based on the data.

What happens with your information when we end the project?
The project will end at 12.31.2022. After the project ends the scrambling key that link name to transcribed interviews will be deleted.

Your rights
So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data.
-

What gives us the right to collect personal data on you?
We process your personal data based on your consent. Based on an agreement with Inland Norway University of Applied Sciences, NSD – The Norwegian Centre for Research Data AS has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find more information?
If you have questions about this study, or if you want to use your rights, please contact:

- Inland Norway University of Applied Sciences.
  Rolf Findsrud: rolf.findsrud@inn.no or +47 95 72 99 15.
- Data Protection Officer: NSD – The Norwegian Centre for Research Data AS, by email (personvernombudet@nsd.no) or phone: +47 55 58 21 17.

Yours sincerely,

Rolf Findsrud
Project leader
Phd-candidate at Inland Norway University of Applied Sciences

I have received and understood information about the project “Performance in Brazilian Jiu Jitsu” and have been given the opportunity to ask questions. I give consent to participate in an interview and for my personal data to be processed until the end date of the project, approx. 12.31.2022.

(Signatur by participant, dato)

Høgskolen
i Innlandet

Vil du delta i et forskningsprosjekt om tjenesteinnovasjon?

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å kartlegge hva som muliggjør og driver tjenesteinnovasjon. I dette skrivet gir vi deg informasjon om målene for prosjektet og hva deltakelse vil innebære for deg.

Formål
Formålet med studien er å kartlegge hvilke psykologiske mekanismer og evner som muliggjør oppdagelse og realisering av tjenesteinnovasjon. Studiet er en del av doktorgraden til prosjektleder Rolf Findsrud.

Hvem er ansvarlig for forskningsprosjektet?
Høgskolen innlandet er ansvarlig for prosjektet.

Hvorfor får du spørsmål om å delta?
Du blir spurt om å delta siden du er eller har vært involvert i innovasjonsprosesser.

Hva innebærer det for deg å delta?
Deltakelse i prosjektet innebærer å stille til intervju. Intervjuet er som regel ca en time, og vil omhandle tema som hva som gjør at innovasjonene har lykkes eller ikke, kreativitet, evne til å forestille seg ting, motivasjon og ressurser. Det vil bli gjort lydopptak av intervjuet.

Det er frivillig å delta
Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykke tilbake uten å oppgi noen grunn. Alle opplysninger om deg vil da bli anonymisert. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger
Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrivet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

- Det er kun personer inkludert i prosjektgruppen som kan få tilgang til data, og tilgangen styres av prosjektleder. Det er primært prosjektleder som vil stå for all innsamling og bearbeiding av data.
- Lydopptaket blir slettet så snart det er transkribert eller ved prosjektslutt. Transkriberingen vil være anonymisert.
- Navnet og kontaktopplysningene dine vil jeg erstatte med en kode som lagres på egen navneliste adskilt fra øvrige data. Dataene lagres på en sikret datamaskin og er anonymisert så snart mulig.

Deltakere vil ikke kunne bli gjenkjent i publikasjoner basert på datamaterialet.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?
Prosjektet skal etter planen avsluttes 31.12.2022. Ved prosjektslutt slettes alle data som inneholder personopplysninger samt lydopptak. De dataene vi sitter igjen med er helt anonyme og oppbevares for å sikre etterprøvbarhet.

Dine rettigheter
Så lenge du kan identifiseres i datamaterialet, har du rett til:
- innsyn i hvilke personopplysninger som er registrert om deg,
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?
Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra *Høgskolen innlandet* har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?
Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:
- *Høgskolen innlandet* ved *Rolf Findsrud: rolf.findsrud@inn.no eller 95729915.*
- Vårt personvernombud: NSD – Norsk senter for forskningsdata AS
- NSD – Norsk senter for forskningsdata AS, på epost (personverntjenester@nsd.no) eller telefon: 55 58 21 17.

Med vennlig hilsen

Prosjektansvarlig
(Forsker/veileder)

Samtykkeerklæring

Jeg har mottatt og forstått informasjon om prosjektet *tjenesteinnovasjon*, og har fått anledning til å stille spørsmål. Jeg samtykker til:

☐ å delta i intervju

Jeg samtykker til at mine opplysninger behandles frem til prosjektet er avsluttet, ca. *31.12.2022*

(Signert av prosjektdeltaker, dato)

Appendix 3: Interview guides paper 3

Interview guide – Bank- and financial services

(Purpose / How data is processed / confidentiality and anonymity / permission to record audio)

(0) Context/backgound:

- Can you tell a little about your job and what you do?
- Can you describe a normal working day?
- What kind of services do you offer?
- What kind of experience do you have in the industry?
- Can you tell about a time when you were very happy with the job you had done? (why)
- Can you tell about a time when you were very dissatisfied with the job you had done? (why)

(1) Define performance:

- How would you describe an optimal (financial) advisor?
- How would you describe a good/optimal financial service?
- What is your goal during customer conversations?
- What do you expect from the customer so that they can get the most out of the service?
- What do you expect from the company?
- What are the most important tasks a financial advisor must or must not do?
- How is your work measured (by management)?

1. Has this changed in recent years?

- How would you describe the optimal company in your industry?
- How can the services be improved?
- Do you have a strategy or routine when you have meetings with customers?
- How much of the advice is set by rules (set by the company, government, agencies, etc) how much is your assessment?
- How much of the advice is calculated advice or do you sometimes use gut feeling?
- If you were to rank/evaluate two financial advisers (or financial services, debt collection services depending on context), what would you look for? What criteria had you used?
- What is effectiveness for you?
- How do you assess whether the service is improved or not?
- Where in the banking industry is there the greatest potential for improvement?
- How do you view the development in banking and financial services with regard to digitalisation?

1. What are the opportunities and challenges with this development?

- How willing are customers to share information?

Finally, is there anything you think I should have asked you about, that you think is important, or that I should have asked you about?

Interview guide – BJJ

(Purpose of research/How data would be used/Confidentiality and anonymity/Permission to record)

(0) Background

- Belt rank
- Role in gym (head instructor/gym owner / manager/ ….)
    - Teaching or just training?
- How much experience do you have with BJJ?
- Can you tell me how you started with BJJ?

- What do you consider your most important accomplishments in the sport? (on the mat or of the mat)
- What are the most memorable moments you have related to BJJ? (what made it memorable?)

- What is your goal with BJJ?
- Do you find it hard to find motivation to train?

(1) Defining student performance:

- What do you think about when rolling? What are you focusing on?

- Are you able to (do you) pay attention to your surroundings?
- How much of your reactions are thoughtful (purposeful) actions compared to just automatic reactions?

- What enable you to do a technique with minimal effort?
- What is it for you that makes techniques work or not work?

- How can you make your jiu jitsu better? How do you become better at jiu jitsu? **
- What are important areas to focus on in order to become better at jiu jitsu?

- What is your philosophy/thoughts/expectations on the different belts? (blue, purple, brown, black)
- What is different between a blue belt and a black belt?

- What do you expect (minimum requirement) from your trainings partners in a class rolling session?
- What do you expect (minimum requirement) from yourself in a class rolling session? Do you have any goal or expectations to yourself in class rolling session?
- What do you expect (minimum requirement) from yourself in a competition setting for you to be satisfied with your own performance?

(2) Ecosystem, digital, social and physical, and contextual influence

Physical

- Can you describe the gym where you train?
    - Members (how many and types e.g. professional athletes, staying in shape, competitors, belt levels,)
    - Location
    - Atmosphere
    - Institutions (norms and rules)
    - What are the most important tasks or thing you do in/for your gym?

    - How has your training process and philosophy changed over time?

- How important is the physic of a student? Has this changed over time?

Social

- In order to become better/bigger/more successful at BJJ, who are the most important actors/people/organizations?

In order to become better at jiu jitsu, …

- How important is the connection to training partners? Because/why (not)?
    - What are key factors in that relationship?
- How important is the connection to the coach/instructor? Because/why (not)?
    - What are key factors in that relationship?
- How important is the connection to _____? (see answers to the previous question **) Because/why (not)?
    - What are key factors in that relationship?
- How important is the social environment in the gym in general? The atmosphere, vibe,
- Are there other key actors involved?

Digitalization (online videos, YouTube, instructional videos)

- What is your perspective on the "online" development in BJJ? (Good/bad)
    - Why?
    - Do you watch allot of the online instructionals?
    - How effective are online instructionals?
    - What are the opportunities/positives?
    - What are the threats/negatives?

Contextual influence

- What are typical things that hinder or helps a competitor's performance?
- Where/when should a competitor and or student be innovative?

(3) Over all:

- What characterize a good competitor?
- What characterize a good student?
- What characterize a well performed technique?
    1. In drilling
    2. In live rolling

- How would you define an excellent performance by a student in a competition setting?
- How would you define an excellent performance in a class or training setting?

Finally, is there anything you think I should have asked you about, that you think is important, or that I should have asked you about?

Appendix 4: Interview guides paper 4

Interview guide - Innovation

(Purpose / How data is processed / confidentiality and anonymity / permission to record audio)

Important information for participants: When we ask questions about key people or third parties, please avoid mentioning people by name, but use for example person A, person B etc.

(● Interview questions ❍Potential probing questions if not covered by the informant)

(0) Context / background:

- Can you tell in general about how you work with innovation / development?
- What are your thoughts or philosophy around innovation and development?
- Tell us a little about different development projects you have been involved in
    - What were the outcomes?
    - Success / not success?
    - What was your role?

- What are the most important resources a company (you) must have to be innovative over time?
- Is it important for a company to be innovative?
- Would you describe yourself as innovative?
- What makes you innovative?

(1) Start:

- Can you tell us about how the projects start? (feel free to use projects mentioned above as an example)
    - What / who was the reason why the project started?
    - Does anyone come up with ideas more often?
    - What were the most important factors (reasons for starting up) in the beginning?
    - Which actors were involved?
    - Think about who were the key people for the project in the start-up. What made the person(s) important?
    - What role did the person(s) play?
    - What qualities would you say that the person(s) have?
    - How was the collaboration in the project?
    - Do you have an example of a typical startup?
    - Do you have an example of an atypical start-up?
    - What are common problems you encounter in the beginning?

(2) Under

- Can you tell us about how the projects are run in the future? (feel free to use projects mentioned above as an example)
    - What / who was the reason why the project was progressing?
    - What were the most important factors (reasons for progress) during the project?
    - Which actors were involved?
    - Think about who were the key people for the project to be driven forward. What made the person(s) important?
    - What role did the person(s) play?
    - What qualities would you say that the person(s) have?
    - How was the collaboration in the project?
    - Has the idea developed or changed during the project?
    - Are the processes usually the same or is it different each time?
    - What are common problems you encounter along the way?

(3) Outcome:

- Think of a good project: What were the most important consequences (outcomes) of the project?
- How have changes spread in the organization or market?
- If you were to give advice to a project manager who was to lead an innovation or research project, what tips would you give?
- Are there any factors (personal, interactive, management) that you think will increase the success rate?

(4) Key factors:

- Think of the most innovative person you know, and compare him or her to someone who is not very innovative.
    - How would you describe the difference between the two?
    - How do they differ from each other?
    - How are they as persons?
    - What qualities do they have?

- How would you rate the effectiveness of a project?
- What assessment criteria would you use to map the success / efficiency / performance of a project?

Inland Norway
University of
Applied Sciences

Resource integration represents the most foundational construct in service-dominant (S-D) logic, but efforts to theorize about the concept are scarce. This thesis contributes to filling that gap. On the basis of literature in service research and psychology, the study explores actors using service innovation and dynamic contexts as empirical domains. Similar to the body needing the heart to pump blood to the entire body for survival, service ecosystems need actors to execute resource integration to push resources throughout and bring life to an entire system. By zooming in on micro-level phenomena of resource integration, we have investigated elements and mechanisms that give energetic force and drive the actors performing activities.

The results of this study contribute to theorizing about resource integration as a phenomenon through combining conceptual and exploratory research about actors' ability to effectively and efficiently integrate resources and develop innovative solutions in services and service delivery through explorative and exploitative resource integration. In a complex, dynamic world filled with problems and challenges, being able to adapt to changing environments, being resourceful and creative, and being able to solve problems under stress may be the most important abilities actors need to face the unpredictable future. A recommendation for actors, then, is to think less about innovation and think more like MacGyver.