Future of Business and Finance

Lars Witell *Editor*

Service Innovation and Management

Digitalization, Service Infusion and Customer Experience

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ISSN 2662-2467 ISSN 2662-2475 (electronic)
Future of Business and Finance
ISBN 978-3-031-76559-9 ISBN 978-3-031-76560-5 (eBook)
https://doi.org/10.1007/978-3-031-76560-5

This work was supported by Knowledge Foundation.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

CTF—Service Research Center at Karlstad University can be described as a popcorn popper, but instead of turning corn into popcorn, it turns discussions and ideas into knowledge. The energy needed to turn ideas to knowledge comes from discussion between academics, practitioners, and students. This book is a result of those discussions—discussions that started in meetings between researchers participating in DISCERN and ISE. Such initiatives, financed by the Knowledge Foundation (KK-stiftelsen), are what have made it possible to have such discussions and to have the energy to turn ideas into knowledge. We are very thankful for the support of the Knowledge Foundation for supporting CTF and Karlstad University with the resources to do research through DISCERN and share it through ISE.

DISCERN (digital services and customer experiences) has been a source of ideas coming from identifying the DNA of service innovation (the profile service innovation for sustainable business (SISB)). DISCERN was initiated to work on service infusion, customer experience, digitalization, and service innovation together with key partners such as Ikea, Volvo, Miller Graphics, Valmet, Tobii Pro, Kongsberg Maritime Sweden, Löfbergs, and Maxi Ica Supermarket. It resulted in key research results that have contributed to building the research environment at CTF and sustain CTF as the leading service research center in the world.

ISE (Improving value creation through service education) is a project in which CTF at Karlstad University, in collaboration with companies and organizations, develops and offers tailored, flexible courses at the advanced level aimed at professionals. The courses are developed in close cooperation with partners to meet their competence development needs in value creation through services. Key partners have been Almega, Attityd, BillerudKorsnäs, Cellcomb, Compare, Effect management, Färjestads BK, Ikea, Industriråd Värmland, Live Nation Nordic AB Löfbergs, NWT, Region Värmland, RISE, SMA Mineral AB, Stål & Verkstad, Uddeholm AB, Unionen, and Volvo Bus Corporation.

It is our hope that this book represents the knowledge created in SISB and DISCERN and that this knowledge is valuable for organizations both in industry and the public sector. We hope that individual chapters can be used in courses in ISE and in education for both traditional university students and professionals.

As editor for this book, I am grateful for having been a part of CTF—Service Research Center for over 20 years. It has been a privilege to work with great researchers, colleagues, and friends over the years. I believe that CTF is a leader in

service research and on turning research into practice. That is why this book is published open access, so it can have an impact on industry and the public sector. Use it, share it, and turn the ideas into changes in behavior.

Karlstad, Sweden Lars Witell

About the Book

Service innovation and management is the key for building a sustainable service business. It is the foundation for building a service business in times of crises, war, pandemics, and major digital changes in society. To be able to take advantage of Internet of Things (IoT), Artificial Intelligence (AI), and Blockchain technologies in building digital platforms, it is important to have key service strategies building on existing knowledge about service innovation and management. This book is built on the latest research from CTF—Service Research Center at Karlstad University. It is intended as guidance for managers and students interested in building a service business.

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Managing Service Toward Better Customer Experiences: Digitalization, Service Infusion, and Service Innovation

1

Lars Witell, Carolina Camen, and Poja Shams

Abstract

Our modern society has created a new service landscape, where new service innovations that are built on digitalization and service infusion are introduced to create better customer experiences. This chapter introduces a service management model which is how service firms can navigate in the new service landscape. Service management is the core and serves as an integral part of a dynamic ecosystem, emphasizing the importance of creating, proposing, and capturing value for. It addresses the challenges of service innovation, service infusion, and digitalization that service firms can use to create better customer experiences. The chapter provides an overview of all contributions drawing on experiences from thought leaders at industrial firms and the Service Research Center (CTF) at Karlstad University in Sweden.

Key Takeaways

- The new service landscape is characterized by a faster pace of service innovation, service infusion, and digitalization.
- Collaboration, privacy, sustainable value co-creation, and service failure recovery are important for service management to succeed.
- New firms entering the service landscape through digitalization are built on digital platforms, have a global reach, and create value through new digital business models.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_1

Introduction

Service providers and customers co-creating value has become the foundation of our modern society. Most citizens work in service firms and use services daily (buying coffee, doing grocery shopping), sometimes without being aware of it (using electricity, using the Internet). According to the World Bank, the services share of the GDP was 64.1% in 2019 and varies greatly by region and country. In richer and more developed countries, it is usually over 80%, while in poorer countries it can be as low as 20%. In addition, quite a large proportion of what manufacturing firms do is service. In 2017, a study by the OECD estimated that on average about 20% of the turnover of manufacturing firms derives from service provision. In addition, the sharing economy (including the gig economy) has emerged as a phenomenon. It is continuing to grow and represents a new way of service provision where a platform connects users who provide services to each other. Our modern society has created a new service landscape, where new service innovations that are built on digitalization and service infusion are introduced to create a better customer experience.

When looking at the new service landscape, we might start to wonder how all these new services are being managed so that employees are treated fairly, and customers get great customer experiences. Early on, Albrecht (1986, p. 20) stated that "service management is a total organizational approach that makes quality of service, as perceived by the customer, the number one driving force for the operations of the business." According to Grönroos (2000 p. 6), to be competitive one needs to have the right prerequisites through a core solution but where success is decided by how "the management of a number of services together with the core solution forms a total service offering." It seems that this perspective on service management has been lost and that if service management should be seen as a strategy to succeed in business it needs to be updated to current business practice and to use the terms that are relevant in the new service landscape.

In this book, we have gathered the thought leaders from the Service Research Center (CTF) at Karlstad University and industry experts from Volvo and Kongsberg. The aim is to (1) identify the driving factors that create a new service landscape; (2) create a framework for service management in a new service landscape; and (3) provide organizations with theoretical models and managerial tools to better navigate in the new service landscape. In the following, we introduce a framework for service management that is the result of several years of research on service management. Based on the framework, we present several book chapters written by experts from academia and industry who share their experience regarding how to understand the new service landscape and how to create successful new services and businesses that can build the foundation for our modern society.

A Framework for Service Management in the New Service Landscape

The new service landscape is characterized by a faster pace of service innovation, service infusion, and digitalization. It is about providing services that create memorable customer experiences. Here, a good customer experience is the outcome we want to achieve, and service innovation, service infusion, and digitalization are the factors that firms can use to navigate in the changing service landscape. However, these are the factors a firm can influence when managing service development and service provision. The extent to which a service firm can influence or even shape the market differs depending on the position a service firm has in a market.

Customer Experience

Going back in time, every firm had a quality manager, over time the quality manager was replaced by a customer satisfaction manager, then a customer loyalty manager, and nowadays the same manager is the customer experience manager. In the rapidly evolving world of customer relationships, the concept of customer experience has become central in shaping the way businesses approach service encounters. Initially rooted in research on customer satisfaction, relationship marketing, and customer engagement, the study of customer experience has started to view the customer response to a service encounter as multidimensional (Lemon & Verhoef, 2016). Customer experience includes a customer's cognitive, emotional, behavioral, sensorial, and social responses to a service encounter. These dimensions are key to the customer journey, which extends beyond a simple purchase transaction or the use of a product or service. A customer experience can be viewed as the response to firm-related contact, essentially focusing on the interaction between a customer and the firm (Lemon & Verhoef, 2016). Alternatively, it reflects the offerings that firms stage and manage (Pine & Gilmore, 2011), meaning that the customer experience extends beyond the "moment of truth," the primary service encounter. The customer experience is determined by the customer's perception and whether a firm recognizes and influences it or not. This value is subjectively constructed and can be influenced by elements beyond the firm's control, such as interactions with other customers or personnel.

Service firms operate in a complex environment, and this complexity has led to a significant shift in roles from traditional profit maximization to embracing a broader responsibility to various stakeholder groups, including consumers. Today's companies must understand and navigate multiple touchpoints, aiming to deliver seamless service across multiple channels to customers. This paradigm shift has led to the development of advanced service strategies, employing digital technology and managing customer experiences to co-create value for both the customer and the firm. At the heart of the customer experience is the interplay between the service provider and the customer. The service provider actively stages and manages customer experiences, while the customer co-creates the interaction and shapes the

customer journey. This relationship reveals the multifaceted nature of customers in the service ecosystem—as consumers, users, guests, actors, and participants. Adopting a firm-wide customer experience management strategy has implications for corporate culture, strategic direction, and capability development (Homburg et al., 2017). Service providers are tasked with identifying ways to design and manage interactions with customers and analyzing how the servicescape and employees influence customer experience. This has led to a holistic approach to customer experience management that extends to all realms—digital, physical, and social, occurring at different "moments of truths" in time and space (Bolton et al., 2018). These moments can occur anywhere in the customer journey and are not limited to the core solution.

In the new service landscape, service firms are active participants in creating and influencing customer experiences. However, customer experiences emerge whether an organization recognizes and influences them or not. Factors outside the control of a service firm, such as other customers, significantly shape the customer experience. Thus, a customer experience transcends the traditional boundaries of interactions between the customer and the service firm. The evolution of our understanding of the customer experience has demanded widening the traditional corporate lens and taking a broader view of the customer journey. Every interaction a customer has with a business—from the initial search to the after-sale service—forms part of the customer journey. From the perspective of a service firm, the design and management of the interactions between the firm and the customer form an integral part of its strategy, contributing to a consistent and comprehensive customer experience. It is about developing a broader perspective, adapting to the digital environment, and nurturing an organizational culture that values customer insights.

Service Innovation

Service innovations are being introduced into the market at an increasing rate. The introduction of more online services, the sharing economy, digitalization via the Internet of Things (IoT), and artificial intelligence (AI) have put extensive pressure on service firms to innovate. A service innovation can be viewed as a new or significantly improved service concept that is put into practice. It can be a new way to interact with the customer, a new way to provide service, a new type of customer experience, or a combination of these things (Gustafsson et al., 2020). Actually, most service innovations are recombinative innovations, where what is new in a service innovation is the combination of two things that previously have not been combined in that specific context.

There are several alternative ways to look at service innovations: you can have an overall definition, you can see different categories of service innovations, or you can see different dimensions of a service innovation (see Witell et al., 2016; Snyder et al., 2016). Gustafsson et al. (2016) suggest that service innovations most often encompass different components and divide service innovation into six categories:

- process innovation;
- business model innovation;
- brand innovation;
- experience innovation;
- social innovation; and
- behavioral innovation.

The authors argue that recombinative innovation is often used to combine different categories. For example, a process innovation can be introduced based on a new business model innovation. Two key ingredients in service innovation are digitalization and service infusion, both of which can be used to leverage a service innovation strategy. Service innovation should be based on a new service development process that is supported by service design principles and methods (Gustafsson et al., 2020). Every service firm should integrate these processes, principles, and methods into a service management strategy. Depending on how much the market is changing, the role of the service firm in the market, and the resources available for service innovation, the role of the service innovation strategy will differ. A key decision is how to deal with both digitalization and service infusion and how to utilize these trends to build a service firm for the new service landscape.

Digitalization

Digitalization, characterized by the adoption of technologies such as online platforms, location-based services, virtual reality, AI-driven services, and blockchain technology, signifies a potential major disruption of the service landscape. Service firms face an increasing need to adapt and exploit the potential of digitalization. By harnessing the power of digital technologies, organizations can reshape service provision, effectively navigating the rapidly evolving service landscape.

Service firms increasingly employ cutting-edge technologies, such as social robots in stores that can offer recommendations and simultaneously measure the customer's affective mode through facial coding. This application of technology allows corporations to grasp customers' emotions and behaviors throughout the customer journey and thus to enhance their understanding of the customer experience and to refine their strategies. With the expanding capabilities of AI, we are witnessing a dramatic reshaping of customer experiences. AI provides tools and services that can enhance our understanding of customer needs. AI-driven services are increasingly becoming mainstream, characterized by automated, unmanned retail stores. Such stores, along with a variety of other innovative services, promise to offer seamless customer experiences from purchase to delivery. Chatbots have evolved from passive information providers to proactive assistants, guiding customers throughout their customer journeys. They play an active role, offering personalized suggestions, reviewing information, and easing the purchase process.

The convergence of the digital and physical realms, termed the "phygital" realm by Banik (2021), brings an additional dimension to the customer experience. In this

hybrid servicescape, humanoid social robots emerge as potent assistants, providing navigational aid, product recommendations, and social interaction. As technology evolves, the potential of AI and robotics in enhancing the customer experience is virtually limitless. From unmanned stores to AI-driven appliances, businesses continuously discover new ways to integrate these technologies, paving the way toward a superior customer experience. Digitalization enables businesses to transform marketplaces into interactive, personalized environments. This evolution facilitates a richer exchange of information between organizations and consumers, enabling a deeper understanding of customer needs and preferences.

In the new service landscape, businesses need to stay agile, turning digitalization into opportunities for growth and innovation. Customer experiences are rapidly evolving, requiring businesses to reevaluate their value proposition and reimagine their relationship with customers. With an increased shift toward service-oriented business models, digitalization creates new avenues for revenue generation and value creation. By embracing digital technology, service firms can transform service provision and reinvent their business models.

Service Infusion

Manufacturing firms routinely add services to their core product offerings. Such service infusion often results in a change in their business models aimed at improving their competitive position. In competitive industries, it is no longer sufficient for a firm to offer excellent products supported by traditional sales-oriented customer service. Rather, they must offer "solutions" in the form of integrated combinations of goods and services to solve their customers' problems (Windahl et al., 2004). The perspective of value creation has thus changed from transactions to long-term co-creation and relationships. This shift has had a great impact on both company strategies and organizational structures and arrangements.

The empirical phenomenon of service business in manufacturing firms has been variously referred to as the emergence of "product-service systems," "servitization," "integrated solutions," and "service infusion in manufacturing firms". We use the term service infusion because it focuses on changes in the value proposition and as such is a concept applicable to all types of firms. In addition, it is a term that was introduced by researchers at CTF (Nilsson et al., 2001) and is a concept we can build on to address digitalization beyond what is happening in the manufacturing industry.

Studies on service infusion rely on a number of different theoretical concepts, such as the resource-based view, contingency theory, service and relationship marketing, new product development, and industry-level supply chains. Yet, most studies simply focus on the empirical phenomenon and lack a stronger theoretical position. In the early papers on industrial services, service tends to be seen as a differentiation strategy, while more recent approaches emphasize solutions and digitalization.

The Service Management Model

Moving forward into a new service landscape where major shifts happen among consumers and in markets, there is a need for a new service management. In Chap. 2, Edvardsson and Tronvoll argue that to move service management forward, managers must navigate the complexities and turbulence in the new service landscape while simultaneously ensuring service provision. The fundamental elements of competitive strategies are shifting, and now digitalization, service infusion, and service innovation are at the core of successful service management strategies to achieve better customer experiences. The driving factors of digitalization, service infusion, and service innovation are transforming how service firms operate, engage with their customers, and create value.

In Chap. 2, Edvardsson and Tronvoll view service management as "a set of competencies available for actors in the ecosystem, enabling and realizing value creation through service." Service management relates to all aspects of service provision, including planning, designing, operating, and improving services. In a new service landscape defined by digitalization, service management has expanded toward dealing with digital service platforms and managing digital customer interactions. Effective service management results in consistent, high-quality service provision. In conclusion, digitalization, service infusion, and service innovation are reshaping service management, forming a new strategic framework for achieving great customer experiences.

Our model for navigating in the new service landscape builds on service management as the core principle, symbolizing its significant role in orchestrating and providing services to ensure good customer experience and ultimately creating a competitive advantage. Service management serves as the core around which other elements revolve, indicating their relevance and key role in strategies of service firms. This conveys the notion of service management as an integral part of a dynamic ecosystem, emphasizing the importance of creating, proposing, and capturing value for all actors involved. This segment addresses the emergence of service platforms, and the need for effective multi-actor collaboration. Surrounding this core is service innovation, service infusion, digitalization, and customer experience. The different areas are related and interconnected, signifying their interplay and influence on one another. All of them are critical to the advancement of service management in the new service landscape. This model illustrates the complex, multidimensional nature of service management and its evolution in the new service landscape.

The outer layer of the model is an expansion of the core themes of service management. It is linked to the central concept of service management, emphasizing the depth and breadth and the implications it has in the new service landscape. The concepts of collaboration, privacy, sustainable value co-creation, and service failure recovery are important for service management to succeed. Collaboration demonstrates the power of a service-oriented approach to value co-creation, with a focus on customer journeys. The implementation of digital solutions within this

framework can lead to the development of deeper relationships with customers and an improved competitive advantage.

Sustainable value co-creation is another important element that focuses on the role of services in facilitating the transition toward a circular economy. It includes activities that extend product life, enable dematerialization, and replace service systems, all contributing to improved environmental sustainability. The service failure and recovery element challenges traditional notions of service failure. It broadens service strategy to include disruptions in ongoing customer experiences and offers strategies for managers to avoid and recover from such disruptions. Privacy includes the role of user data in creating value propositions, the implications for consumer privacy, and the complexities of navigating data-driven digital business models (Fig. 1.1).

Overview of the Book

The book describes service management in the new service landscape and is built on the service management model described in Fig. 1.1. In this chapter, Lars Witell, Carolina Camen, and Poja Shams introduce a service management model for the new service landscape. The following chapters discuss different facets of the service management model with more details for service firms about how to navigate the new service landscape.

In Chap. 2, Bo Edvardsson and Bård Tronvoll describe the evolution of service management from focusing on services as a category of market offerings (as distinct from physical products) to a value creation perspective. This evolution of service management can be described as occurring in three broad periods. The first period was when services were understood as unproductive or as additions to physical products. Management models borrowed from the manufacturing and marketing of goods were used for service management, but service firms could not be managed in a good way using these theoretical models. This sparked the second period in which research on service-based concepts and theoretical models was based on the service encounter, service quality, and customer relations in service organizations. However, no widely accepted view or definition of service and service management was developed during this period. About 20 years ago, in the third period, a new view of service was developed, and this view is still moving service management forward. Service (singular) was understood as a perspective of value creation. Service-dominant logic was born and has developed into a systemic view of understanding service businesses. Recently, a somewhat different view, a practice theory approach to service management, has been suggested, which still focuses on value creation through service.

In Chap. 3, Bo Edvardsson and Bård Tronvoll discuss service management from the perspective of the service ecosystem, which includes creating, proposing, and capturing value for all actors involved. Service management is becoming essential due to the increasing importance of the service sector in many economies worldwide and the servitization of manufacturing industries. This chapter highlights the

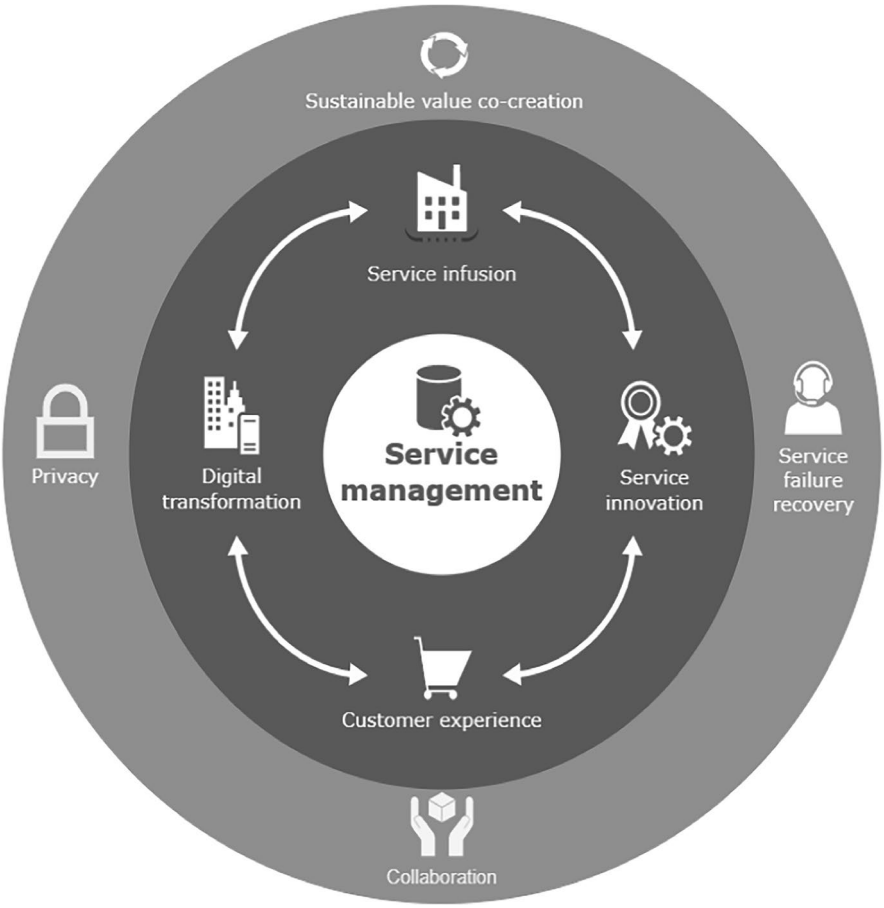

Fig. 1.1 Service management model

challenges and opportunities for service management in the face of digitization, including the emergence of service platforms. The chapter also emphasizes that service platforms should be understood as a center point in the service ecosystem, facilitating supply and demand among several actors. The service platform can also create opportunities for service managers to manage value co-creation effectively, facilitate collaboration, and provide tools and resources to customers. The chapter concludes by discussing the essential management considerations for service management, including multi-actor collaboration and service ecosystem transformation.

In Chap. 4, JanErik Odhe, Pritam Padhi, and Lars Witell describe service management in manufacturing (where profit margins deteriorate over time) and how service infusion can be a way to help a manufacturer create a competitive advantage. This chapter briefly explains the concepts of servitization and service infusion before identifying opportunities for and obstacles hindering service growth. From a

strategy-based perspective, the chapter presents a conceptual model that evaluates the current and future growth potential of the service business. Four specific service growth strategies are identified and illustrated through business cases. The service growth strategies represent physical services (*free-to-fee* and *ownership change*) and digital services (*remote* and *upgrading*).

In Chap. 5, Maria Åkesson, Nina Löfberg, Bård Tronvoll, and Annika Nissen illustrate how activities can lead to a service-oriented value co-creation approach among actors during the development of a digital solution. Activities performed in the development project focused on the customer's process, collaboration, and creating a win–win solution. Adopting these new dimensions of a service-oriented value co-creation approach resulted in positive outcomes for the actors directly involved in the project and for actors experiencing the result. By broadening the scope from the company to the ecosystem, the digital solution became applicable, and deeper relationships with customers were created. The company gained specific domain competence and increased its competitive advantage.

In Chap. 6, Johan Netz, Pritam Padhi, Peter Magnusson, JanErik Odhe, Mattias Skrinning, and Åsa Windfäll discuss the fact that recent advancements in technology have created new possibilities for customizing product design without significantly changing production costs. By using configurators, a form of platform-based technology, firms now have the means to customize products more efficiently. The authors combine a literature review from 1980 to the present with findings from an empirical study of a newly developed sales configurator for maritime components. Previous research has mainly focused on the technical side of configurators, whereas the business and organizational issues involved are much less understood.

In Chap. 7, Klas Hedvall and Lars Witell discuss the fact that services are key enablers in the transformation toward the circular economy because they provide the prerequisites for sustainable value co-creation. Services in the circular economy include "traditional" offerings, such as maintenance and remanufacturing and newer types of services in the sharing economy. This chapter discusses three sustainable value co-creation activities in more detail: (1) extending product life, (2) dematerialization, and (3) replacing service systems. It also provides examples of services that support sustainable value co-creation and, ultimately, improve environmental sustainability.

In Chap. 8, Jasenko Arsenovic, Bo Edvardsson, and Bård Tronvoll discuss the fact that managers who handle complaints often assume that customers report a service failure and passively wait for service personnel to resolve the problem. In this conceptual work, the authors draw on decades of service recovery literature and problematize the current conceptualization of what constitutes a service failure. The authors introduce a broader and more elaborate conceptualization of service failure, encompassing failures that are not necessarily associated with the core service offering but that cause a temporary or a permanent interruption during an ongoing customer experience. Using this new conceptualization, the chapter outlines five pieces of advice for managers to avoid and recover distressed customers by emphasizing the importance of the human touch.

In Chap. 9, Amie Gustafsson, Christina Öberg, and Poja Shams explore the concepts of customer experience, phygital customer experience, and digital customer experience. The chapter begins by describing the evolution of the concept of experience, including the challenges of effectively understanding and measuring customer experiences. The authors then delve into the challenges of understanding customer experience in the context of digitalization and automation, specifically through the lens of self-service technology. This chapter provides an in-depth examination of the conceptualization of customer experience in unmanned stores and offers insights into how researchers and practitioners can navigate this evolving new service landscape.

In Chap. 10, Peter Samuelsson, Mia Larsson, and Sara Davoudi investigate the role of user data in creating value propositions within digital business models and the implications for consumer privacy. The authors examine the user agreements of seven digital platforms, exploring how consumer data is utilized to enhance customer experiences and generate profits, while addressing privacy concerns. The main findings reveal six value propositions derived from consumer data. By combining consumer data and privacy research with a business model perspective, this chapter provides insights for managers seeking to navigate the complexities of data-driven digital business models while respecting consumer privacy and integrity.

In Chap. 11, Joanna Pilawa, Lars Witell, and Per Kristensson provide insights from the Swedish Innovation Index. The growing importance of service has brought greater opportunities for service innovations to influence the market and improve the customer experience. Despite efforts by firms to develop service innovations, they often fail to introduce new services to the market. Ultimately, customers are the ones who assess, buy, and use a new service. This is why the Swedish Innovation Index was introduced as a customer-centric perspective on service innovation that measures firms based on customers' perceptions of their innovations. This allows firms to predict the future adoption of new services and the relative attractiveness of the firms. The Swedish Innovation Index provides a new perspective that is independent of the firm-centric view of innovation. It opens avenues for both managers and academics to observe, predict, and better utilize the potential of service innovations.

In Chap. 12, Javaneh Mehran and Per Kristensson discuss the fact that both academia and industry unanimously agree on the pivotal role of innovation in driving sustainable economic growth. Business-to-business (B2B) services constitute a substantial portion of the global economy. Primarily, innovation in B2B service research has predominantly centered around knowledge and technology within the manufacturing industry, where the commercialization of ideas in the form of new product development is deemed as innovation. More precisely, B2B innovations have been discussed and analyzed across various dimensions and categories, often with a primary focus on the core product. Generally, a firm-centric perspective has prevailed in defining innovation, while the manner in which customers perceive a firm's innovativeness has been understated. The chapter proposes a framework for categorizing B2B innovation features into six distinct types. By introducing the notion of an innovation dimension continuum, we elucidate how varying degrees of basic,

advanced, and ecosystem integration solutions impact business customers' perception of a firm's innovativeness.

In Chap. 13, Peter Samuelsson, Lars Witell, Patrik Gottfridsson, and Mattias Elg discuss the healthcare sector's concerns about the growing cost of healthcare services and increasing demand. Innovation, particularly service innovation, has been put forward as a top priority to address the major challenges of healthcare. But how should a healthcare organization balance the needs of tomorrow through service innovation with the needs of today through high-quality care? What development practices and types of innovation need to be implemented to deliver high-quality care now and in the future? By combining how to work on service innovation with what creates satisfied patients in healthcare organizations, the study addresses how to balance quality improvement and service innovation.

Final Words

During the last years, the service landscape has changed drastically. New firms entering the service landscape through digitalization are built on digital platforms, have a global reach, and create value through new digital business models. The sharing economy has created a new competition where peer-to-peer service provision puts new demands on service management. In the present book, thought leaders at CTF have joined with industry experts at Volvo and Kongsberg to develop service management for the new service landscape. Drawing on research performed together with firms that have been used in executive teaching for industry, these thought leaders have summarized and conceptualized their experiences and shared them in this book.

What can we learn from this book? One key point is that what we know as service management needs to be updated to fit the new service landscape. We can see the financial, environmental, and social dimensions of business and realize that service management is needed, but we must recognize that it has to incorporate the latest developments in terms of technology and the competitive landscape to be relevant. Service management can then employ digitalization, service infusion, and service innovation to build better service business in the future. It is also necessary to better guide service firms in their work on sustainability, so they do not miss the target.

Many changes are happening at once. We have experienced a pandemic, the world is in turmoil, and AI is changing business practice. There is a need for a way to manage service firms and service ecosystems that can deal with all these changes at once. We believe that service management is that way and that this update of the foundation and state-of-the-art of service management will make firms adopting service management ready for success in the new service landscape.

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Service Management: Evolution and Moving Forward

2

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Abstract

This chapter describes the evolution of service management (SM) from focusing on services as a category of market offerings (as distinct from physical products) to a perspective on value creation. This evolution of SM can be described in three broad periods. The first was when services were understood as unproductive or additions to physical products. Management models from manufacturing and marketing of goods were used, but service organizations could not be managed by using models from manufacturing. This sparked the second period, in which research on service-based concepts and models was grounded in the service encounter, service quality, and customer relations in service organizations. However, no widely accepted view or definition of service and SM was developed during this time. About 20 years ago, in the third period, a new view on service was developed, and this view is still moving SM forward. Service (singular) was understood as a perspective of value creation. The Service-Dominant Logic was born and has developed into a systemic view of understanding service businesses. Recently, a somewhat different view—a practice-theory approach to SM—has been suggested, which still focuses on value creation through service.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_2

Key Takeaways

- Services were initially understood as supporting goods and managed with models from manufacturing firms. Later, service (singular) was understood as a perspective on value creation and value was understood as always being co-created in ecosystems.
- Service management is focused on value creation in service firms and all types of organizations. This systemic perspective on value creation is moving service management forward.
- Based on service as a perspective and the crucial role of actors—both individuals and firms as well as other organizations—service management can be defined as "a set of competencies available for actors in the ecosystem, enabling and realizing value creation through service" (Tronvoll & Edvardsson, 2020).

Introduction

The growth of service industries, especially after the Second World War, has fueled the growing interest in understanding services and how to manage service firms. The dynamic development of service management over 70 years or more has influenced specific sectors, such as healthcare, hospitality, banking, insurance, and, more recently, e-commerce and platform-based organizations. In addition, service in manufacturing firms has become an important topic in service management (SM), often referred to as service infusion in manufacturing or servitization.

Journal of Service Management (JoSM), currently in its 34th year of publication (as of 2023), stated, "As economies across the world have become more service-oriented, the importance of studying and understanding all aspects of managing service has increased. This presents new opportunities to undertake cutting-edge research within various industry sectors. All require new knowledge, skills, and abilities to meet the changing marketplace." Against this background, we will *describe how service management research has evolved, can be defined, and is moving forward*. The rest of this chapter is organized as follows. We start by describing and discussing the evolution of service research, before looking at how to move SM forward by zooming in on a systemic understanding of value creation and a practice-theory-informed approach. Finally, some concluding remarks on the evolution of SM and the way forward are provided.

Service Management and Its Evolution

We start with an overview of how service research has developed over time, then discuss how the concept of service has been understood and defined, and then how service management has been understood and is defined.

Views on Service Research: A Historic Background

The services concept can be traced back to the Scottish liberal economist and philosopher Adam Smith (often referred to as the father of capitalism and economic science), who is probably the best-known scholar who focused on the role of services in the economy. In his seminal work, "The Wealth of Nations," Smith ([1776] 1969) distinguished between the outputs of what he termed "productive" and "unproductive" labor. Productive labor is the production of goods that can be stored after production and subsequently exchanged for money or other resources of value. Unproductive labor creates services that perish during production and, therefore, do not contribute to wealth. These ideas were later rejected by several scholars, such as Jean-Baptiste Say ([1803] 2001), a liberal French economist and businessperson, who noted that production and consumption were inseparable in services and coined the term "immaterial products."

A significant step in developing service thinking was provided by the French scholar Fredric Bastiat ([1848] 1964, p. 162), who claimed, "Services are exchanged for services … It is trivial, very commonplace; it is, nonetheless, the beginning, the middle, and the end of economic science." Bastiat (1860, p. 40) argued that individuals have "wants" and seek "satisfactions," which are the foundation of economics, and in a broader sense about value and value creation, what offerings—products, services, and combinations of these—do for individuals (customers) in terms of factors such as satisfaction. Later on, John Stuart Mill (1849) argued that services are "utilities not fixed or embodied in any object, but consisting of a mere service rendered … without leaving a permanent acquisition." He believed that "the value of production was not in the objects themselves, but in their usefulness" (p. 46). Usefulness is defined and assessed by users, and usefulness drives the service provision. However, during the Industrial Revolution, management research was absorbed by manufacturing physical products with services that may be less important as an addition to the core; that is, the products.

A century later, when service research emerged as a separate field of study, it was mainly a protest against the prevailing product-centric views and manufacturing focus. During the 1960s, the US economy changed significantly, and for the first time, more people were employed in the service sector than in the manufacturing industries. Other developed nations also soon shifted became service-based economies. Services were understood as necessary in their own right rather than as some residual category that was left over after goods were considered. This recognition triggered a change in the way services were defined. Scholars began defining services in terms of their unique characteristics rather than comparing products and management implications (see, e.g., Sasser et al., 1991). In addition, the growth of the services sector as part of GDP in the OECD countries increased steadily, and still does. The services industry is the fastest-growing sector in the USA, creating more than 300,000 jobs yearly, according to the US Bureau of Labor Statistics, and business services grow by more than 20 percent each year (Wirtz, 2023). An important driver for the growth of services is increasing demand from millennials looking for a higher quality work–life balance that can be offered through services rather

than traditional manufacturing or knowledge-based economy sectors. This phenomenon has been termed the "gig economy," where people do not hold long-term employment but instead offer high-value skills on a project basis and move between tasks depending upon short-term needs.

The Development of Service Research: Key Stages

Scholars began tracking the economic impact of service activities after the Second World War, and Colin Clark (1957) was one of the first economists to show the importance of service activities in the economy. He argued that the service economy was a low-skill, low-wage economy. However, the marketing scholar George Fisk (1967, p. 67) had a different view: "At the present moment mankind seems poised for another leap, this time into the service revolution, in which machines will replace mind power in the production of ideas and services, just as in the industrial revolution the use of machines replaced muscle power." Fisk's prediction was accurate, capturing how technology has transformed the service economy and our understanding of services as an essential phenomenon in society regarding job creation and growth. But what does the term or concept of "services" refer to, and how can services be understood? This has been discussed in service research literature with a focus on defining and classifying services and comparing them with goods. The old theories and models did not help manage services; hence, service research has rapidly developed since the 1950s (Furrer & Sollberger, 2007). Hill (1977) suggested a shift in understanding services as offerings to denote changes in the condition of a person or something in possession of the customer.

Gradually, the discussion among scholars has shifted toward managing service organizations and services in manufacturing firms (Grönroos, 1982). Using an evolutionary metaphor as a framework, Fisk et al. (1993) traced the evolution of service research from its embryonic beginnings in 1953 to its maturity in 1993. They identified three stages in this evolution: *crawling out* (1953–1979), *scurrying about* (1980–1985), and *walking erect* (1986–1993). In this historical overview, we will add two stages—*becoming mature* (1994–2003) and *broadening to systemic* (2004–).

During the *crawling out* stage, the first service scholars focused on how and why services were different from goods, identifying the characteristics of services, such as intangibility, heterogeneity, inseparability, and perishability, eventually becoming the IHIP-dominant characteristics (Intangibility, Heterogeneity, Inseparability, Perishability). During this stage, Shostack (1977), a top manager at City Corporation, argued for the need to break away from the goods logic. Management concepts and models developed to manage goods production were unsuitable for managing service firms. Shostack's landmark article in *Journal of Marketing* was influential in developing service research, with contributions from different academic disciplines such as marketing, management, human resources, service operations management, informatics, and computer science (Edvardsson & Tronvoll, 2022).

In the *scurrying about* stage, attention shifted from "Are services different from goods?" to "What are the implications of these differences?" Lovelock (1983, p. 115) noticed that service management research put "too much emphasis on drawing distinctions between goods and services and not enough on developing good insights for practices in the service sector." To solve this issue, he proposed several classifications of services, with each type of service requiring a different marketing and management treatment. This stage also saw the first papers on new topics such as the service encounter, service design, service mapping (Shostack, 1984), service encounters, and "moments of truth" (Czepiel et al., 1985). A dynamic development was initiated. However, the service encounter approach narrowed the understanding of service to interactions between a customer and a firm or frontline employee. Nevertheless, the encounter focus was important for the development of SM and informed areas such as service quality (e.g., Parasuraman et al., 1985) and service recovery, as well as the role of employee competence, attitude, and behaviors when interacting with customers (Grönroos, 2007).

One of the most important contributors to the development of service research in this stage was Normann (1984), a scholar and management consultant. He discussed SM from a strategic and systemic point of view by providing a framework that focuses on strategic service management practice. Normann emphasized the use of image and culture as management instruments, along with compelling and persuasive communication tools. He also argued that the design and management of effective service organizations are unique processes and that the principles that needed to be applied were not well understood or covered in the established management literature, which is primarily concerned with goods production. Normann drew on his extensive experience as an international management consultant to service organizations to develop a cohesive framework with which to consider the relevant strategic management issues facing these organizations. He also sought to offer some ideas to improve leadership effectiveness in service organizations. Normann (1984, p. 4) conceded that the distinction between manufacturing and service companies is often unclear and argued that technological change has led many organizations to see themselves more as service organizations and forced them to shift toward a service orientation. Normann laid out a basic conceptual framework with five main components: the market segment, the service concept, the service delivery system, the image, and the culture and philosophy. Together, these five components constitute the "Service Management System" (SMS).

During the *walking erect* stage, the number of research publications increased a lot, but also matured on topics like managing and measuring service quality, given the heterogeneity of the service experience; designing and controlling intangible processes; managing supply and demand in capacity-constrained services; and organizational issues resulting from the overlap in marketing and operations functions (Fisk et al., 1993). Early development of this view also resulted in the service blueprinting method, a tool for describing and analyzing service activities involving customers and employees who carry out different linked activities and interactions through which services come about (Bitner et al., 2008); this approach is now widely used in service practice to manage challenges, including customer

participation and engagement. Other topics in this stage are complaints management (e.g., Tax et al., 1998), service recovery (e.g., Hart et al., 1990), and the role of employee competence, attitude, and behaviors when interacting with customers. The service encounter research was broadened to include relational dimensions, with implications for SM in general, particularly how to manage expectations, develop and design service processes, and service productivity, but still limited to the customer–firm dyad.

The debate then began about the pros and cons of alternative approaches and methods to measure and manage service quality (Brown & Peterson, 1993; Cronin & Taylor, 1992; Parasuraman et al., 1988). Many topics and management challenges in need of research were identified, but service quality and customer satisfaction, both with links to customer relationships, were the most studied topics. For their part, Sasser et al. (1991) presented a wide range of case studies that focused on "breakthrough" service providers that dramatically transformed the industry. They argued that these firms had transcended the established rules of service by consistently meeting or exceeding their customers' needs and expectations. Such breakthroughs fostered growth, productivity, and profitability, and these service providers became role models for many other service organizations. Moreover, a number of new SM topics emerged, including new service development and technology infusion in service, supported by developments in and with the expansion of information and communication technology and a growing number of digital devices.

In the *becoming mature* stage (1993–2003), Grönroos (1994) used real-world examples from both service and manufacturing firms to focus on the fact that most firms face service competition. Hence, managing services becomes strategically important for service firms and manufacturers of goods. Schneider and Bowen (1995) argued that companies that master the rules of the service game could outperform the competition. According to them, the key to winning is to understand that the customer experience is the foundation for managing an organization, extending to how employees are treated and the condition of the physical facilities. They emphasized that people (customers, employees, and managers) are key to service success and that this should be fully recognized in the increasingly technical sophistication of service science (Ehrhart et al., 2011). These scholars also argued that SM requires an understanding of the co-creation of value with and for people. This occurs when an appropriate psychosocial context is created for people to produce, deliver, and experience a service process. Thus, service management requires an understanding of the complexities of people as co-creators of service in often complex and interdependent systems. Therefore, we can conclude that these early influential scholars often had a management interest and emphasized people, processes, and systems. Case studies and management practice influenced their work, while in-depth theorizing and conceptual developments were lacking.

The field of service research concerns what is traditionally known as "service organizations" and constitutes a future paradigm for organizations in general (Gummesson, 1994). Traditionally, the division of goods and services was outdated: "It represents a myopic production view, while the service economy is an expression for customer-oriented and citizen-oriented, value-enhancing offering"

(Gummesson, 1994). Johnston and Clark (2005) offered a similar view in their article on service operations management, suggesting a window of opportunity for academics in the operations field to engage in the service arena.

Fisk and Grove (2010) discussed three interrelated service topics: making tools, creating language, and building community. To become mature, a wide range of tools were developed that advanced the sophistication of the service research field, such as studying technology readiness in service (Parasuraman, 2000) and the role of self-service technologies in customer relationships (Meuter et al., 2000). In addition, the gap model analyzes service quality, the SERVQUAL instrument measures quality, and service blueprinting to analyze service processes. In the creating language stage, service research concepts and models began to diffuse widely through developing concepts such as service quality, service theater, service experience, servicescapes, and service recovery.

The implications of customer participation in service processes were discussed and understood as a key SM challenge (Fließ & Kleinaltenkamp, 2004; Moeller, 2008) that has implications for the service process and outcome dimensions such as service quality, experience, and value. It is difficult, if not impossible, to support or control customers to ensure they carry out their activities in service processes in the intended way. The service process and outcome depend on customers' resource contributions (Fließ & Kleinaltenkamp, 2004), and it can be demanding to manage customers. In recent years, the scope has broadened to include customers, employees, and multiple collaborating actors and their contributions.

Building a community of scholars is crucial for service research to become mature and for social structures to be formed. Fisk and Grove (2010) envisioned a rapid increase in the number of participants and publications in the service field that creates both opportunities and challenges as the domain of SM broadens. This is in line with Rust (1998), who argued that service research should not be a niche field and that service research is growing with contributions from new academic fields. Furthermore, scholarly journals such as the *Journal of Service Research* and *Journal of Service Management* are broadening the scope of SM and focusing on strategic business issues and research problems. Service scholars can apply their knowledge and skills to answer fundamental questions in the areas of quality, productivity, and efficiency and thus exercise their expertise in business services as well as the voluntary sectors. These opportunities have been explored and exploited in service management research by responding to emerging societal and organizational management challenges. Scholars have argued for a systemic understanding of SM and a focus on value creation for all engaged actors in a service ecosystem (Edvardsson & Tronvoll, 2022), which is discussed later in the chapter. First, we will discuss different views of service(s) and how they understand and define service have energized the development of SM (Vargo & Lusch, 2004; Edvardsson et al., 2005) to become more *systemic*.

Understanding and Defining Service

The understanding of services as offerings with specific characteristics (IHIP) has been replaced by considering services as activities, deeds or processes, and interactions (Lovelock, 1991; Edvardsson et al., 2005). Gustafsson and Johnson (2003, p. 29) suggested that the service organization should "create a seamless system of linked activities that solves customer problems or provides unique experiences." In addition, Vargo and Lusch (2004) called for a new dominant logic for marketing in which service, rather than goods, is fundamental to economic exchange. In their literature review and results from expert interviews, Edvardsson et al. (2005) suggested that service is best understood from the lens of the customer and is based on value-in-use. Thus, service (singular) is understood as a value creation perspective, and value is always being created, often among multiple collaborating actors through resource integration in service ecosystems shaped by institutional arrangements (Vargo & Lusch, 2016). In this perspective, physical products are enablers for service that creates value. A car enables transportation services and a robot in an assembly line enables productivity development in the production system. This also implies that customers are understood as active correlators by integrating and using a wide range of resources, and Gummesson (1995) argued for a systemic approach in SM and the emphasis on value outcomes for all engaged actors.

Throughout the history of "service," the understanding and scope of the term have changed. In Table 2.1, selected definitions and descriptions of service show the development over time toward a greater focus on value creation through service.

Although Table 2.1 shows a wide range of views on and definitions of the concept of service, no widely accepted definition has emerged, which presents a challenge for SM. In the next section we discuss how to understand and define service management.

Understanding and Defining Service Management

Grönroos (2015) drew on decades of experience to explain how to manage any organization as a service business and move closer to current and future customers. He argued that service management is all about customer-focused, outside-in management and that current academic research and business practice can be used to make organizations more successful in a service-based economy. Although the discipline has taken a giant leap since the late 1970s, we are just starting to see a new era of service management that will become the basis for value creation and economic survival. In a recent book, he developed this idea and argued for servitization in all organizations, not only manufacturing firms, but also in private and public service organizations (Grönroos, 2021). Grönroos argued that in the eyes of the customer, all organizations provide service, and we may summarize the current understanding of service as a perspective on value creation. In addition, this perspective is still in development mode (see, e.g., Edvardsson & Tronvoll, 2022).

Table 2.1 Selected definitions of service over the years

Reference	Definition of service
Bastia (1848)	The great economic law is this: services are exchanged for services ... it is trivial, very commonplace; it is nonetheless the beginning, the middle, and the end of economic science.
Alderson (1937, 1957)	What is needed is not an interpretation of the utility created by marketing, but a marketing interpretation of the whole process of creating utility.
Rathmell (1966)	Goods are produced: services are performed.
Kotler and Connor (1977)	The importance of physical products lies not so much in owning them as in obtaining the services they render.
Lehtinen (1983)	A service is an activity or a series of activities which take place in interactions with a contact person or a physical machine and which provides consumer satisfaction.
Lovelock (1991)	A service is a process or performance rather than a thing.
Bateson (1992)	The heart of the service product is the experience of the consumer, which takes place in real time ... it is the interactive process itself that creates the benefits desired by the consumer.
Gummesson (1995)	Consumers do not buy goods or services, but rather purchase offerings that render services, which create value.
Zeithaml and Bitner (1996)	Services are deeds, processes, and performances.
Grönroos (2000)	Service is a process consisting of a series of intangible activities that normally, but not necessarily always, take place in interactions between the customer and service employee and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems.
Vargo and Lusch (2004)	Service is the application of specialized competencies (knowledge and skills) through deeds, processes, and performances for the benefit of another entity or the entity itself.
Edvardsson et al. (2005)	Service is a perspective on value creation rather than a category of market offerings. Co-creation of value with customers is key and the interactive, processual, experiential, and relational nature form the basis for characterizing service.
Lovelock and Wirtz (2007)	Services are processes (economic activities) that provide time, place, form, problem-solving, or experiential value to the recipient.
Vargo and Lusch (2016)	Service is a perspective on value, and value is always co-created, often involving multiple actors who integrate resources in service ecosystems. Institutional arrangements shape value co-creation.

Source: Edvardsson and Tronvoll (2022, p. 38)

We argue for the importance of continuing to discuss how to understand and define SM. This discussion may benefit from reflecting on three primary shifts, as discussed by Furrer et al. (2020): (a) from being highly focused on the customer (for example, customer satisfaction) and/or on the organization (for example, quality) to broadening the scope to include environmental and context-related issues; (b) from highly service-centric toward a higher interdisciplinary dialogue; and (c) from a goods-dominant logic to a service-dominant logic and systemic understanding of

value creation. These shifts show that the firm-customer dyad approach was too narrow to understand the full potential of service and SM. Service processes are not isolated entities, but are embedded in and dependent on different support structures, often including a number of systems providing access to resources, but also come with norms, rules, and established routines (North, 1990). The development of service logic and service-dominant logic has broadened the scope and emphasized the importance of understanding ecosystems and their designs (Vink et al., 2020).

So far, no widely accepted view and definition of SM has been presented. Kleinaltenkamp (2022, p. 54) argued that "the term 'service' still is dazzling and multifaceted, and consequently so is the term service management—depending on the understanding of service that is or needs to be managed." However, there is wide support for understanding service as a perspective on value creation (not a particular category of offerings) for engaged actors. Furthermore, SM has a foundation in a systemic understanding of value creation among resource-integrating, collaborating actors in ecosystems. Still, the lack of a widely accepted definition of service has consequences for understanding how to respond to and manage service challenges and opportunities in different markets and situations.

As a basis for further development, Tronvoll and Edvardsson (2020) defined service management as "a set of competencies available for actors in the ecosystem, enabling and realizing value creation through service." This definition is based on understanding service as a perspective on value creation by emphasizing the crucial role of actors—individuals and firms as well as other organizations—and their competencies for service provision. Furthermore, SM should focus on the processes needed to create value for a focal actor (for example, a firm) but also for other actors, such as customers, employees, or partners. It also includes resources and competencies linked to value creation in existing and new lines of business by exploring and exploiting new opportunities. Furthermore, we believe that emphasizing multi-actor collaboration and service ecosystem transformation is a way for SM to respond to societal challenges such as sustainability and manage value creation in times of crisis (Tronvoll & Edvardsson, 2020). The business and societal landscape of service is changing, possibly more rapidly than ever, partly due to the impact of digitalization and advances in many other technology areas. This development creates challenges and opportunities for SM, and two responses to these will be discussed next.

Moving Service Management Forward

To move service management forward, managers must make sense of and navigate the complexities, turbulence, and transformation in the service environments while simultaneously maintaining their daily operations (MSI 2020). Below, we discuss two main approaches to move SM forward and respond better to market challenges and opportunities. First, the ecosystem lens emphasizes interdependencies among actors, resources, and institutional arrangements (norms and rules), forming systems that are embedded in or dependent on other systems. Second, a practice-theory

perspective emphasizes service activities and what multiple actors are doing in specific situations and contexts, forming practices that reproduce but also change over time.

A Systemic View

Recent service research priorities have highlighted the need for a systems-grounded understanding of the service environment and of the profound transformation necessary to evolve toward sustainable service ecosystems (Ostrom et al., 2021). The authors have argued that the context in which service is created and experienced has changed fundamentally in many respects. For instance, digitalization and technological advances, especially information technology, have led to a proliferation of different service systems and changed how customers serve themselves before, during, and after purchase. Novel technologies have augmented human–machine interactions and business models designed to transform data into actionable intelligence offer new opportunities to integrate resources through automation and scale-up service innovations (Bornet et al., 2021). With advances in technology, personalized services provided by offline actors are replaced by new assistant methods, such as personalized chatbots in online and mobile environments.

Another area providing a number of challenges and opportunities for SM is sustainability, which includes environmental, social, and economic responsibility and generative circularity (see, e.g., Petros et al., 2021). These and other systemic changes in the service landscape create turbulence and several challenges when orchestrating the ecosystem, but also many opportunities for SM (Carida et al., 2022). Furthermore, systems are embedded in and dependent on other systems, forming service ecosystems. When we buy online, we use resources embedded in the Internet, our smartphone, and systems for physical transportation to move the products we have bought from, say, a warehouse, to our home. When using products such as smartphones, we need access to other systems. Thus, value creation is best understood and managed from a system view and cannot be fully managed at the dyadic level. The concept of a service ecosystem (Vargo & Lusch, 2016) enables value co-creation to be situated within complex exchange systems. Service ecosystems are understood as systems of nested systems (for example, a family is part of a city, a city is part of a nation), all of which exhibit self-adjusting behaviors by arranging and rearranging their components to regulate themselves and thus value co-creation (Vargo & Lusch, 2016). The behavior of a service ecosystem as a whole does not merely represent an extension of the behavior of its sub-systems. This understanding of service ecosystems' nestedness and emergent nature also affirms that self-adjustment occurs in "a sea of change" (Lusch & Vargo, 2014, p. 170). The different systems involved form a service ecosystem, and functioning integration and exchange, both within and between systems, including the integration between system levels, is crucial.

The service ecosystems' perspective implies that all actors can influence the institutional arrangements, which guides value co-creation (Wieland et al., 2016).

However, some actors might have more power than others. Essentially, actors are continuously shaping institutional arrangements through their actions, and when they do so intentionally, they are involved in managing the service ecosystem. The service ecosystems' perspective further infers that shaping service ecosystems involves collective, collaborating processes, which creates both challenges and opportunities in SM. These opportunities are increasingly enabled by different digital technologies and platforms acting as institutional arrangements and resources in service ecosystems. The following sections discuss new opportunities to manage service through value co-creation platforms and digitalization.

A Practice-Theory View

A practice-based approach has been suggested for SM to understand and respond to complex and turbulent environments. Building on general practice theory, Skålén and Gummerus (2022) outlined a framework that conceptualizes service among multiple actors by focusing on value co-creation practices (VCPs). This framework conceptualizes service as bundles of VCPs, providing a theoretical foundation for studying and managing service as realized sets of activities by engaged actors.

Practice theory is a term for different theories focusing on understanding the social world through practice. "The common denominator across the various strands of practice theory is that practices encompass templates of organized routine activities that individual and collective actors (e.g., organizations) draw on to carry out concrete activities" (Feldman & Orlikowski, 2011, p. 83). Skålén and Gummerus (2022) showed that the activities in the music market—recording, sharing, and streaming—are bundles of value co-creation practices (VCPs), tightly linked to practices that actors perform to co-create value. They make a distinction between generic and specific VCPs. Generic VCPs cut across service, whereas specific VCPs reflect time- and context-specific variants of the generic VCPs. The generic VCPs in their study of the music industry are: producing, distributing, exchanging, and consuming. The specific VCPs are recording, sharing, and streaming.

Furthermore, VCPs comprise four elements: understandings, engagements, procedures, and materials, in line with practice theory. These elements both reproduce and maintain services, as well as create and innovate them. The practice-based view of SM focuses on identifying and coordinating customers' and other activities and how they can be supported to arrive at intended outcomes and value-in-context. It is crucial to understand both the overall rules and value creation logic in, for example, transportation, healthcare, or restaurant firms, combined with specific insights in a particular transportation firm, hospital, or restaurant. These specific VCPs may have different routines, IT systems, equipment, or collaborating partners. Thus, it is necessary to understand the big picture in the ecosystem and how service activities are carried out in the focal service firm or organization to be managed.

Conceptualizing service as bundles of VCPs that several actors realize implies that service managers need to focus on the VCPs of the markets in which their businesses are active, as well as on the VCPs of the larger context, or ecosystems that

may influence value co-creation and their respective firms (Vargo & Lusch, 2016). The framework developed by Skålén and Gummerus (2022, p. 96) provides managers with the means to focus on value co-creation in practices advising "managers to analyze the immediate and extended environments of their firms based on the generic VCPs by asking the following questions: How are producing, distributing, exchanging, and consuming conducted in the focal market? How is the market being digitalized? What are the general implications of these changes for the firm and its service innovation? What is happening in adjacent markets?"

Concluding Remarks

We describe the evolution of SM in five broad states, grounded in earlier descriptions and literature reviews (Fisk et al., 1993; Fisk & Grove, 2010; Furrer et al., 2020). The first is the period up to 1979, when services were understood as something unproductive or additions to physical products. Management models from manufacturing and marketing of goods were used during this period. Shostack (1977) argued that services could not be managed by using concepts and models from manufacturing and argued for breaking free from the product mindset. There was a need to understand how to manage services grounded in their specific logic. This sparked development in the second to fourth periods, between 1979 and 2003, where service characteristics, service encounters, and customer relations in service firms were studied empirically. At the same time, conceptual models were developed and tested in empirical studies. Also, the implications for managing service organizations were discussed, and much of the service research was developed in close collaboration with service management practice. Considerable attention was devoted to managing service quality and other topics, including servitization in manufacturing, customer complaints, and the growing importance of technology infusion in service. However, no widely accepted view or definitions of service and SM were developed. The fifth period began with an article in the *Journal of Marketing* by Vargo and Lusch (2004), suggesting a new dominant logic for marketing and how to manage service. Service (singular) was understood as a perspective of value creation and value always being co-created among multiple collaboration actors in service ecosystems shaped by institutional arrangements. The Service-Dominant Logic was born and has developed into a widely cited systemic view on service and how to manage not only service businesses but also manufacturing firms and public service providers and government organizations.

SM is ongoing, and Furrer et al. (2020, p. 311) argued in a literature review that service research and SM are moving forward by building on earlier service research and learning from other academic discourses as well as by studying current management challenges. A wide range of empirical studies, often in close collaboration with service firms and mangers, shape the way forward combined with theoretical developments. The systemic understanding of service is moving SM forward and has become a norm for all types of management. A somewhat different view to moving SM forward has been suggested recently, still focusing on value creation

through service. The practice-theory-based approach to SM suggests that managers focus on understanding what is shaping service activities in specific practices.

SM has developed over the last 70 years toward an overall management norm: service understood as a value co-creation perspective. The solid conceptual and empirical bases for SM have formed a powerful basis for understanding and managing future challenges and opportunities. While these opportunities might differ between organizations, the challenges for many, if not all, managers include developing sustainable development strategies and using or orchestrating artificial intelligence (AI) and robots. The short- and long-term management focus should be on value co-creation in service ecosystems for all engaged actors and is applicable in all types of businesses, including manufacturing firms and other organizations.

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Service Management Through Service Platforms and Digitalization

3

Bård Tronvoll and Bo Edvardsson

Abstract

This chapter discusses service management from the perspective of the service ecosystem, which includes creating, proposing, and capturing value for all actors involved. Service management is becoming essential due to the increasing importance of the service sector in many economies worldwide and the servitization of manufacturing industries. This chapter highlights the challenges and opportunities for service management in the face of digitization and technological advances, including the emergence of service platforms as a dominant model and tool for service management. The chapter also emphasizes that service platforms should be understood as center-points in the service ecosystem, facilitating supply and demand among several actors. The service platform can also create opportunities for service managers to manage value co-creation effectively, facilitate collaboration, and provide tools and resources to customers. The chapter concludes by discussing the essential management considerations for service management, including multi-actor collaboration and ecosystem transformation.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_3

Key Takeaways

- Service management is critical for creating value for customers and other actors in the service ecosystem, and the use of service platforms has become a vital model and tool for leaders.
- Digitalization and technological advances have enabled augmented human–machine interactions, which has fundamentally changed customers' ways of co-creating value and both opportunities and challenges for service management.
- Service managers can leverage digitalization and service platforms to automate tasks, facilitate, and scale up self-service solutions and create personalized service by integrating different resources and actor contributions.

Introduction

Service management focuses on proposing, creating, and capturing value for the benefit of involved actors, including meeting the needs and expectations of customers. Service management has grown in importance in recent years due to the growing significance of the service sector in many economies worldwide and the servitization of manufacturing industries. As a basis for a deeper understanding of this development, Tronvoll and Edvardsson (2022) defined service management as "a set of competencies available for actors in the ecosystem, enabling and realizing value creation through service." This definition emphasizes the crucial role of actors—both human and also non-human, such as individuals, organizations, and technology—and their competencies for service provision creating value for themselves and others in the service ecosystem. The multi-actor collaboration and service ecosystem transformation is a way for service management to respond to societal challenges such as sustainability and manage value creation in times of change (Tronvoll & Edvardsson, 2022).

Effective service management in times of change requires a deep understanding of the service ecosystem, service platforms, and digitalization. However, in recent years, digitalization and technological advances, especially information technology, have led to a proliferation of revolutionary understanding of service. This has fundamentally changed customers' ways of creating value, enabled by the growth of technologies such as sensors, blockchain technology, the Internet of Things, AI, and robotization. Understanding the new service landscape creates several challenges when managing value co-creation. The development has enabled augmented human–machine interactions. This has led to calls for a deeper understanding of service management and many new opportunities and challenges for service management.

Service platforms have emerged as a dominant model and tool for service management (Lusch & Nambisan, 2015). Service platforms represent the midpoint of the service ecosystem, with multiple actors taking advantage of the network by facilitating supply and demand (McIntyre & Srinivasan, 2017). Fehrer et al. (2018) argued for three different logics of platforms; firm-centric, solution-focused, and open platforms. Drawing on a service ecosystem perspective and institutional view

(Vargo & Lusch, 2016), we emphasize the systemic understanding of service platforms. Service platforms are usually considered digital platforms that are related to large international technology firms such as Uber, Airbnb, or Netflix. However, all firms, including manufacturing firms such as Volvo, ABB, and Kongsberg Group, use service platforms as part of their value co-creation provision with other service ecosystem actors.

Against this background, this chapter aims to explain how service management can use service platforms and digitalization. First, we describe challenges and opportunities for service management as a discipline. Second, we discuss service platforms to manage value creation in service ecosystems. Third, we focus on service management linked to digitalization and technology. Finally, we highlight some essential management considerations.

Challenges and Opportunities for Service Management

Service management faces many challenges and complex situations, especially when applying enabling technologies, new types of service platforms, changed customer behavior and roles, and new business platforms. The challenges and opportunities appear when service managers must handle operational and strategic issues and balance how to engage various actors to co-create value for the benefit of all involved actors. Consequently, managers must propose, create, and capture value in constellations of multiple actors within the broader service ecosystem. Service managers should address these challenges through a service ecosystem lens. Besides, many challenges are grounded in transitional changes in how value is co-created related to sustainability, use of artificial intelligence, etc. This calls for scholars to join forces with reflective practitioners to move service management to the next level, including, as this chapter focuses on, how service platforms develop to become a useful tool for service managers to co-create value to benefit all engaged actors.

A challenge that service managers face is establishing a service platform that allows users to collaborate to propose, create, and capture value. In doing so, managers must ensure the engagement of various actors, including customers and stakeholders (Brodie et al., 2011). However, actors and customers may hesitate to engage with the service platform for many reasons, such as concerns about privacy, intellectual property rights, or quality control. Hence, maintaining high trust between the actors engaging in the service platform becomes vital. Another challenge is managing the complexity of multiple actors due to their different goals and interests. This requires a balance of control, while also ensuring flexibility in the service platform.

The service platform can also create opportunities for the service managers and effectively manage value co-creation. The platform facilitates and manages collaboration by providing a space in which customers and other actors can collaborate to share ideas, feedback, and suggestions and enable real-time responses. It can also provide tools and resources that customers can use to personalize their experiences

and value co-creation. The platform can also be a vital input for innovation by collecting data on customer behavior and preferences, improving the co-creation process, enabling scalability to a larger audience, and giving input to new activities.

On an institutional level, the service platform creates challenges and opportunities, as multi-actor constellations with embedded interlinked institutions (norms and rules) shape and are shaped as new ways of collaborating emerge. For example, a number of rules, regulations, and standards have been introduced over the years, some of which focus on protecting customers and their ownership of data collected in digital markets and social media (GDPR, for example). Furthermore, industry standards, such as the telecom standards that make it easier to use mobile phones across operators and countries, put pressure on customer protection. These standards provide a common way of accomplishing service provision, which usually makes things easier for both managers and customers. It is increasingly common for multiple actors to be engaged in new ways of collaborating, coordinating the use of resources, and realizing new business in service ecosystems. The complex and challenging situations for service managers are illustrated by the blurry borders of service ecosystems and the interdependency of firms that were previously more stand-alone. In addition, many service ecosystem factors shape the actors' experiences in different situations, including social factors (Edvardsson et al., 2011).

Thus, value co-creation is best understood and managed if the managers take an ecosystem view when addressing challenges in service markets and complex situations that are not easily managed. The challenges become increasingly apparent when different digital technologies and service platforms are used. The sections below discuss service platforms in more detail and then how digitalization develops service platforms.

Service Platforms: A Way to Manage Value Creation

The business and societal landscape of service is changing, perhaps more rapidly than ever, partly due to the advances in technology and the impact of digitalization. Service ecosystems shape and are shaped by actors in collective, collaborating processes. A service ecosystem refers to a complex network of actors connected through relationships that propose, create, and capture value in the service ecosystem. The concept of a service platform has changed from traditional inter-firm competition to a joint approach of coopetition—simultaneous competition and cooperation—between actors. This enables the formation of collaborative and joint value co-creation processes (Parker et al., 2017). Hence, a service platform can be viewed as a critical component of a service ecosystem, as it enables value co-creation by multiple actors and is a useful tool for managing multi-actor collaborations and, thus, value co-creation.

In a business context, the term *platform* was introduced in the early 1990s, referring to a family of products that utilizes the same design, engineering, and production, as well as components (Helmond, 2015). A service platform can be a powerful tool for a firm because it facilitates service exchange and manages performance. A

service platform enables value co-creation and utilizes the flow of resources that can serve actors in their exchange activities. Among management scholars, Wheelwright and Clark (1992) invoked the concept of a platform to describe products that meet the needs of a core group of customers, but can be modified by adding, substituting, or removing features. McGrath (1995) argued that platforms are collections of common elements (often technological) implemented across various products. Later, Meyer and DeTore (1999) defined a platform as a set of subsystems and interfaces forming a typical structure from which a stream of products can be developed over time. More recently, Lusch and Nambisan (2015) defined a service platform as a modular structure that combines tangible and intangible resources or components and coordinates the interaction of resources and actors.

Platforms are now becoming increasingly critical in managing service in competitive markets. Recently, Parker et al. (2017) used the term "platform ecosystem" to show how companies such as Apple, Google, and Microsoft use service platforms to facilitate and enhance the ecosystems, illustrating how the locus of value creation moves from inside the firm to the outside. An example of a service platform outside the big tech companies is Volvo AB, a Swedish multinational automotive company that is growing its business by offering a service platform with a range of services that complement their vehicles. Volvo's "Service and Connected Services" platform provides various service provisions to improve the customer experience and enhance vehicle ownership. By using the service platform, Volvo offers customers more convenience and flexibility. For example, the platform allows customers to book services and repairs online, track their vehicle's maintenance history, and receive real-time updates on their vehicle's status. Volvo also uses the service platform by offering connected services that integrate with the vehicle's technology. For instance, Volvo car's "On Call" service provides customers with remote access to their vehicle, allowing them to check their car's status, lock or unlock the doors, and even start the engine. In addition, the service platform offers services beyond traditional vehicle ownership, such as car sharing, where customers can rent out their Volvo to other drivers, and a concierge service that provides personal assistance for tasks such as booking flights or making restaurant reservations.

Consequently, moving from "portfolio thinking" to "platform thinking" ties together a firm's offerings, markets, and processes (Gawer & Cusumano, 2008). Those authors argued that a platform must perform a function essential to a broader technological system and solve a business problem for multiple firms and customers in the industry. A characteristic of the platform approach is that it is neither a firm (with specific boundaries) nor a marketplace (with more permeable boundaries). Instead, the platform is "a foundation created by a firm that enables other firms to build products and services upon it as in a marketplace" (Kelly, 2016, p. 122). Therefore, a platform owner must consider a system design that will solve the challenges of integrating the activities that stimulate the co-creation of value, such as in a "marketplace." This highlights the critical roles that platform-based value co-creation plays in supporting collaboration between multiple actors and, thus, resource integration.

We define a service platform as a space with structures designed for engaged actors' collaborative activities to enable value co-creation in the service ecosystem (building on Tronvoll & Edvardsson, 2020 definition of an innovation platform). The activities performed on the service platform rely on a constellation of actors and their purposeful value co-creation. Co-creation activities need the support, coordination, and control provided by the value creation; a space of institutional arrangements embedded in structures. Moreover, the value co-creation space is an open and fuzzy supportive structure. For example, a value co-creation space may include a physical location or virtual communities that can help develop and support the value proposition. The combination of space and activities constitutes the service platform that enables the firm to manage the value co-creation. Service platforms and service management are closely connected, with platforms providing the infrastructure and tools for managing collaboration with multiple actors, which enables the organization to effectively and efficiently engage and co-create value with and for customers and other actors. With their activities and space, service platforms are designed to support and direct value co-creation among a wide range of collaborating actors.

Based on Fehrer et al. (2018), platform logic emphasizes that a platform should be solution-oriented and adopt an open logic framework. Building on this, we note that service platforms' activities (through actors) and space (through institutional arrangements) are designed to enable and direct value co-creation. A service platform builds on existing resources and relationships among engaged actors to coordinate and facilitate value propositions. As part of the value co-creation, one or several actors invite other actors with complementary resources to collaborate to play various supporting roles. Carida et al. (2019) discussed the embedded processes of matching, resourcing, and valuing to show how actors use service platforms to facilitate these processes. The integrative and exchange spaces and activities coordinate and facilitate multi-actor collaboration to improve the service platform and, thus, the ecosystem's viability. When the actors are co-creating activities, they simultaneously form the basis for the service platform. This happens at the intersection of actor-driven (integrative and exchange activities) and institutional-driven (integrative and exchange space) concepts, as shown in Fig. 3.1.

According to this view, integrative and exchange activities for value co-creation must be managed by an actor—or, rather, the constellation of collaborating actors with the necessary competencies (knowledge and skills) and access to the necessary range of resources. That is, the firm, its partners, and customers collaborate by pooling resources to facilitate value co-creation for the benefit of all engaged actors. The intention is that the activities will result in new and useful value propositions, understood as an invitation to join forces in co-creating value that fits the firm's business model and helps develop the ongoing business and viability of the service ecosystem. The outcomes of integrative and exchange activities are manifested in the renewal of existing or new value propositions. An integrative and exchange space is an institutionalized practice generated inside and outside the ongoing value co-creation at the service platform. The space can be designed in various ways, involving different sets of resources and constellations of actors. The space includes governance, legal, and technological structures.

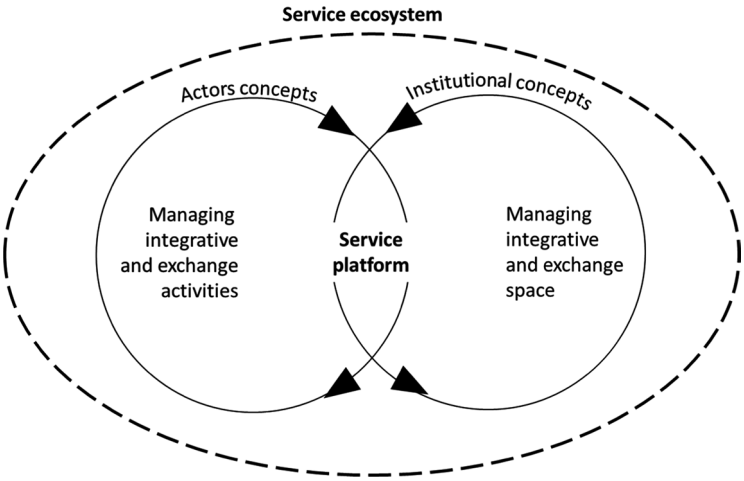

Fig. 3.1 Illustrating the service platform (extending Tronvoll and Edvardsson (2020))

The interdependencies between value propositions and how they are created, on one side, and the ways value is captured, on the other, provide the basis for the activities that are done. Service managers must balance the interdependencies between value propositions, value co-creation, and value-capturing activities. In addition, service managers also need to allocate necessary space to facilitating institutionalized practice generated inside and outside the ongoing business at the service platform. The service platform is also a strategic response to changes among actors and the market to enable value co-creation. The service platform's built-in institutional arrangements link the proposing firm's business model and strategy statements to value co-creation and capturing activities. Platforms are becoming increasingly critical in managing service and scaling a service business on global markets. Making it possible to manage service platforms to enhance value co-creation and innovation in ecosystems provokes service leaders to create new challenges and opportunities.

Digitalization and Platformization Are Changing the Role of Service Management

Digitalization and platformization have transformed the business landscape, leading to a fundamental shift in how service is understood and managed. Platformization refers to the process of creating a digital platform that facilitates interactions between various actors, such as firms, customers, suppliers, and partners. It often involves creating or extending an ecosystem of actors who share a common interest in collaboration to share knowledge and expertise. The platform typically leverages technology to enable actors to connect, share resources, and transact with one another seamlessly and efficiently. A successful platformization can lead to various

ecosystem effects, where the value of the platform increases as more actors join and contribute to the ecosystem.

Technologies have enabled digital transformation to change customer expectations and behavior and blur industrial borders, resulting in, for example, new competitors or changed roles of service platforms. For example, leaders in the music industry had to entirely change their mindset and business model when streaming services provided by the likes of YouTube and Spotify disrupted the traditional market for listening to music. The rapid adoption of digital technologies and platformization create new challenges and opportunities for multi-actor collaboration, which co-creates and captures value for engaged actors.

One of the most potent streams in technological development today is artificial intelligence (AI), which is characterized by the self-learning abilities of machines exhibiting aspects of human intelligence. AI provides opportunities to increase service provision and customer interaction effectiveness and efficiency, such as using AI applications for medical diagnoses or intelligent chatbots to support customer interactions. Conversely, AI could, in the short term, threaten human service jobs in many industries, from bus drivers and call center agents to financial analysts, lawyers, and doctors (Huang & Rust, 2018). In addition, robotics represents another multifaceted technological field that is becoming increasingly relevant for service management, a device to support or replace mechanical, repetitive work that does not require highly skilled knowledge workers. Thus, advanced robots can perform a broader scope of manual tasks, changing the nature of work across various industries. For instance, through cryptocurrencies like Bitcoin, blockchain technology has a significant potential to disrupt business due to its core mechanics.

Digitalization also affects service management on a macro level because it disrupts current service ecosystems. New actors, often IT firms with powerful platforms, emerge in traditional service markets and threaten established service providers (examples include Amazon and Alibaba in retail, Airbnb in hospitality, and Uber and Google in mobility). With their digital service platforms, business models, and extensive market coverage, they become disrupters in established markets and transition beyond traditional market boundaries. These firms have successfully built new forms of strategic benefit, creating an ecosystem economy with one or a few dominant actors. Firms rapidly develop skills with the aim of creating a service ecosystem that connects customers to a multi-actor network. Iansiti and Lakhani (2017) used the term digital domino effect to describe a process in which more and more markets tip the balance. Thus, the many actors that traditionally compete in different industries are reduced to just a few firms that capture growing shares of the overall economic value. Digitalization also drives servitization, which refers to shifting from a product-centric to a service-centric business model (Tronvoll et al., 2020). This transformation is often improved by technological developments that enable firms to offer holistic solutions or substitute their products with services, such as cloud-based "software as a service" to replace software products.

Enabling digital technologies and platforms continue to create pressures for change and many opportunities to renew and scale up value co-creation. Service management will embrace digital transformation as a novel way of co-creating

value with and for customers, employees, and all other engaged actors. A digital mindset and service platforms may facilitate the widespread adoption of new, more efficient practices (Aksoy et al., 2019) and help transform businesses. One firm that relies heavily on technology on its service platform is Uber, a ride-hailing service that connects customers with drivers through a mobile app. The platform uses GPS technology to track a customer's location and finds the nearest available driver. The service platform handles all aspects of the transaction, from booking to paying for the trip. The app also provides real-time updates on the driver's location with an estimated arrival time. Uber has changed the traditional taxi industry by offering a more convenient and affordable alternative. The platform has also developed in other areas, such as food delivery (Uber Eats) and freight transport (Uber Freight). Another digital service platform firm is Airbnb, which connects people who are searching for short-term accommodation with people who have extra space to rent (for example, spare rooms, apartments, or entire homes). The platform allows customers to search for accommodation options based on location, price range, and other preferences and then book and pay for their stay online. The service platform also offers an opportunity to leave reviews, so new customers can read reviews from previous guests and hosts before booking. Airbnb has also expanded its platform to include other services, such as experiences and restaurant reservations. Uber and Airbnb are good examples of service platforms that utilize digital technology to provide customers with a seamless and practical experience while creating new opportunities for business partners and their collaboration.

These examples show how digital technologies foster new opportunities for service management, and similar developments and transform are present in almost all sectors, such as healthcare, entertainment, and education. At the same time, there is a need to develop the human touch when serving customers, as the human side of service is still essential. An important question in service management is what technology can and should do and how and where employees, human activities, and interactions are needed to create value. A vital service management task is to balance technology and the human touch ("high tech and high touch") in ecosystems in order to co-create value. A related issue is how personalized or individualized services are fostered and what role digital technology may play. One way is to offer self-service, self-help technologies, chatbots, and virtual assistants that can interact with customers in a natural and human-like way. These technologies can boost customer value and employee productivity in many, but not all, service platforms. We may still wish to occasionally meet a doctor for medical needs, ask a dentist to check our teeth, or consult a broker when buying a house. While an online virtual tour of a house might be beneficial, a final decision to purchase will usually require a physical visit. From a service management point of view, these digital service platforms offer a new framework for proposing, creating, and capturing value.

We conclude that service management is at a point where digital technologies and access to data in a wide range of databases and cloud platforms foster a wide range of new service management opportunities. These opportunities include improving customer and employee engagement and well-being. One example is software-as-a-service (SaaS) applications, which have explosive growth,

eliminating barriers to reaching customers and developing collaborations with actors in a service ecosystem. By introducing business analytics tools, SaaS applications are increasingly embedded in the day-to-day service management activities and business transformation, including change toward sustainability. However, there are also many challenges linked to data security and privacy. We believe that GDPR and other challenges and opportunities generally inform service management by fostering forward thinking and the quest to ensure its evolution is sustainable. Transforming service businesses requires a wide range of competencies in digitalization and issues linked to environmental, social, ethical, and economic responsibility. We believe this is a challenge for service management. Therefore, in the future service management will require many complementary competencies.

Managerial Considerations

Service managers should expand their thinking on using service ecosystems, digitalization, and digital service platforms in several ways to enable businesses to gain strategic benefits through value creation. First, they can reduce errors, increase accuracy, and enable faster response times by using digitalization and digital service platforms to automate repetitive and time-consuming tasks, such as data entry and customer service inquiries. Second, service managers can use digital service platforms to collect, process, and analyze large amounts of data, providing real-time insights into customer needs and behavior. This can improve service value co-creation by identifying trends, patterns, and opportunities for improvement and providing a deeper understanding of customer needs and preferences. In addition, digital service platforms make it easier to facilitate self-service solutions, enabling customers to serve independently of time and place. This also contributes to lower costs and improved productivity, and self-service often complements traditional high-touch service. Third, firms can adopt a higher degree of personalization. Using digital platforms to create personalized service, such as AI-generated chatbots and virtual assistants, service managers can interact with customers in a natural and human-like way. This can increase competitiveness by providing more personalized and relevant offerings, making it easier for customers to fulfill their needs. Finally, service managers can use service platforms, especially digital ones, to integrate different resources and actor contributions, allowing them to manage most aspects of value co-creation in a single platform.

Conclusion

This chapter has described the challenges and opportunities of service management and the use of service platforms. The support from digital-enabled technologies might enhance service platforms, where multiple collaborating actors are embedded in the dynamic use of technology. Service management and digitalization have a symbiotic relationship, where service management is enhanced through digital

technologies, and digitalization is enabled by effective service management. Integrating digital technologies in service management enables firms to improve the efficiency and effectiveness of their value co-creation, which provides strategic benefit.

Service management can enable digitalization by providing a framework for integrating and managing digital technologies within and across the service ecosystem. It provides the necessary governance, processes, and structures to ensure that digital technologies are implemented in a way that is aligned with the firm's goals and objectives, creating value for customers. Digitalization can also enhance service management by automating and robotizing processes, improving data analysis, and providing real-time insights into customer needs. This can lead to a more efficient value proposition, co-creation, and capturing to improve customer engagement and a more favorable experience.

We argue that service management is still developing, propelled by new technology and digitalized service platforms. Managing the use of existing service platforms and designing and developing new, more powerful ones creates challenges and opportunities for service management in the future. However, the need for the human touch may be even more critical in the future when service management increasingly embraces digital-enabled technology, such as AI and robots. Creating the right balance between high-tech and individualized human touch and simultaneously responding to sustainable value co-creation practices are among the many challenges for service management in the future.

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Strategies for Service Growth

4

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Abstract

In the competitive world of manufacturing, where profit margins deteriorate over time, service infusion might be a way to help a business turn in the right direction. This chapter briefly explains the concepts of servitization and service infusion, before identifying service growth opportunities and obstacles. From a strategy-based perspective, we present a conceptual model that evaluates the current and future growth potential of the service business. We identify four specific service growth strategies and illustrate them through business cases. The service growth strategies represent physical services (*free-to-fee* and *ownership change*) and digital services (*remote* and *upgrading*).

Key Takeaways

- The strategic service growth model describes how manufacturing firms can assess their current situation, the product-service composition, and the degree of digitalization and build the right service strategy for service growth.
- When a manufacturing firm infuses services into its business for service growth, the *free-to-fee* transition strategy can help the firm increase its revenues and initiate a transformation from a product-centric to a service-centric business model.
- For advanced services, new capabilities and organizational arrangements need to be introduced, for which firms can employ the *changing ownership*, *remote,* and *upgrading* service growth strategies.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_4

Introduction

Imagine that you are the CEO of a manufacturing firm that has made a business out of selling machines. The competition is becoming fiercer every year and you can see the erosion of your company's profit margins. You realize that in five years the income of selling machines will no longer cover its costs. It is time to act, and the key decision is to either (1) sell the business while still possible or (2) try to identify new business opportunities. While driving home in your Tesla, you realize that if Tesla plans to make money out of self-driving cars as taxis, why couldn't your firm start providing new innovative services? For most of the day, your machines are just sitting there. You ask *Siri* in your *iPhone,* "How can I make more money?" *Siri* responds, "Have you thought about servitizing your business?"

In the 1960s, Theodore Levitt suggested that manufacturing firms could benefit by providing solutions; for example, instead of selling drills, a firm could sell drilled holes (Levitt, 1969). When Vandermerwe and Rada (1988) introduced the concept of servitization, the main reason was to provide better service and to increase customer loyalty, which only indirectly grows the service business. Oliva and Kallenberg (2003) noted that servitization offers a competitive advantage, which can lead to service growth and larger margins. Other reasons for offering services are increased resource efficiency, decreased sensitivity to price competition, and decreased revenue volatility. This means that the business can grow under the assumption that the manufacturing firm is charging the customer for service provision. In some cases, a change of business model is needed, such as turning services for free to services for fee (Witell & Löfgren, 2013).

The present book chapter describes how managers of a manufacturing firm can develop a strategy for service growth. With the concept of service growth, we focus on (a) increasing the service share of the firm turnover, but also on (b) increasing total turnover. We introduce a conceptual model that helps to analyze the business of today to develop a scenario of the business of tomorrow, where the service business has grown and become a key component. We then analyze how four specific service strategies (divided into the two paths of physical and digital services) can be used to grow a service business: (a) free-to-fee, (b) changing ownership, (c) remote, and (d) upgrading. Finally, we provide insights into what this means for servitization, in both theory and practice.

Servitization and Service Infusion

There has been an increasing interest in the term "servitization" both in theory and practice. Servitization can be viewed as a transformational process of shifting from a product-centric business model and logic to a service-centric approach (Kowalkowski et al., 2017). Many product-centered firms have realized that solely selling products is not enough. A manufacturer can become a preferred supplier of

services through the product life span by earning the customers' loyalty. To succeed with this strategy, the manufacturers can deliver a combination of services that minimizes the overall costs associated with owning and using the product (Wise & Baumgartner, 1999). The involvement of customers and key partners in co-creation throughout service provision is often required to foster a service culture and provide services (Aarikka-Stenroos & Jaakkola, 2012). The likelihood that a servitization initiative will succeed is higher when there is an alignment of business logics among all actors involved in service provision, often including dealers and external service providers (Kowalkowski et al., 2017). In order to compete by providing services rather than products, large manufacturers such as Rolls-Royce, Caterpillar, ABB, Siemens, IBM, and Cisco have transformed their business models.

To create a competitive advantage, manufacturing firms can infuse services into their value proposition. This process is referred to as service infusion, where the focus is on customer orientation and the increase of services. The concept of service infusion focuses on changes in the offering and is narrower than servitization, which focuses on changes in the organization and business logic. Moving from transactional business models to service provision is a complex and multifaceted process. When services become a larger part of the business model and service infusion is no longer sufficient to organize service provision effectively, new service capabilities, business models, and processes must be introduced to sustain the competitive advantage (Eloranta & Turunen, 2015). Therefore, manufacturing firms are increasingly seeking service-led growth strategies in order to secure their competitive advantage and expand their business. The extension of the service business results in greater revenues and profits for the firms (Oliva & Kallenberg, 2003).

Manufacturers have been urged to rethink their business models, especially with the advent of novel digital technologies such as the Internet of Things (IoT), big data, and cloud computing (Verhoef et al., 2021). The digitalization represents a push to create value downstream, away from the manufacturing process toward providing services required to operate and maintain the manufactured product. Traditional downstream service can be built into a product through new digital technologies such as IoT sensors and AI. Digital servitization has become an extension of servitization, where digital technologies have become a natural part of service provision. However, the digital paradox shows that manufacturers have had difficulty capitalizing on their investments in digital technologies. For most manufacturers, it has been difficult to even get their investments in digitalization back, since digital services often account for only 1–4 percent of turnover (Gebauer et al., 2020).

With the implementation of a new logic for creating, delivering, and capturing value, a digital transformation of business models can be promoted by digital technologies (Verhoef et al., 2021). Although the implementation of servitization and digitalization in product companies can be performed separately, there is a mutual relationship between them (Coreynen et al., 2020) since digitalization is an important enabler of servitization.

Opportunities and Obstacles for Service Growth

A rationale for service infusion involves taking advantage of strategic, financial, and marketing opportunities as firms can use service infusion as a differentiation strategy (Gebauer et al., 2011). Previous research has stressed that service infusion can be used as a strategy for improving profits in highly competitive industries. However, this only works when the extent of service infusion achieves a critical mass (Fang et al., 2008). To become a successful differentiation strategy, the share of services needs to reach the critical mass of 20 percent of turnover, which firms such as Volvo, Kone, and Caterpillar have achieved. Later in this chapter we will view this as the product-service composition. By services, we mean both basic services (such as financial and field services) and advanced services such as integration and optimization services (Baines et al., 2017). From a customer perspective, services can lead to improved efficiency and effectiveness of their manufacturing and logistics processes, which drives their operational performance. Initiating, maintaining, and capitalizing on service infusion requires new capabilities (Spring & Araujo, 2013).

From a practical perspective, there are several internal and external obstacles to succeeding with service infusion. The most significant internal obstacle to working with service infusion is organizational readiness, which originates when managers are unaware of what activities are to be performed in order to have the right organizational arrangements in place (Brown et al., 2009). For a product-oriented manufacturing organization that wants to offer services, finding a profitable business model can also be difficult. This is due to the tradition of giving away services for free, or even customizing a service offering to sell products in the manufacturing industry (Oliva & Kallenberg, 2003). Managers could also hinder the active promotion of services, as they could push their sales force to sell services without knowing how they could benefit the customers. In practice, this has been seen in firms that are trying to sell more services, but where sales managers still have bonuses for selling more products. In a case where the bonuses switched from selling products to selling services, the sales of services increased 100 percent in one year.

Different Models of Explaining Service Growth

There are several alternative models for describing service growth in manufacturing firms. The most important ones are:

- Offering-based models.
- Organization-based models.
- Strategy-based models.

The offering-based models are closely related to the concept of service infusion and focus on how the offering is different or can change over time in an organization. Vandermerwe and Rada (1988) viewed services in manufacturers as having three stages: (1) the company is in either a goods or a service business; (2) goods

and services are combined in offerings; and (3) offerings are complex bundles of goods, services, information, support, and self-service elements. Based on a study in the microelectronics industry, Mathieu (2001) described an offering-based model as (a) customer services (interactions between seller and buyer) to (b) product services (support of goods) and then (c) services as products (services independent of the company's goods).

The organization-based models of service growth are the most common ones in the literature. Based on a multiple case study Oliva and Kallenberg (2003) identified different organizational configurations that a manufacturer can perform: (a) consolidation of product-related services (services related to goods), (b) entering the installed base (IB) service market, (c) expanding to relationship-based services or expanding to process-centered services, and (d) taking over end-users' operation. This model started much of the research interest in servitization and has had a major impact on the further development of the literature.

Strategy-based models of service growth are based on services becoming an integrated part of the firm strategy; that is, the strategy has a service orientation (Gebauer et al., 2010). A shift in business strategy can be described as a change in the strategic positioning of a manufacturer. Rather than simply moving from manufacturing to services, manufacturers can have alternative strategies toward services. Gebauer et al. (2010) suggested that there are several alternative service strategies, including (a) customer service strategy, (b) after-sales service provider, (c) customer support service providers, (d) development partner, and (e) outsourcing partner. In the following, we will develop a strategy-based model for strategic service growth.

A Model for Strategic Service Growth

Many firms view service infusion as a way to grow their business and to create new revenue streams. For many manufacturing firms, product competition is fierce and insufficient to create a sustainable competitive advantage (Gebauer et al., 2011). The business can grow in several ways, and it has been argued that service offerings potentially have larger profitability than product offerings (Matthyssens & Vandenbempt, 2008). The introduction of a service business has enabled new revenue flows, an increased cash flow, and a strengthened competitive advantage. It is also often the backbone of many business models, where service revenues drive the profitability of manufacturing firms. The servitization journey often starts with the adoption of an after-sales strategy that focuses on spare parts, repair, and maintenance. However, other service growth strategies have been introduced recently to grow the service business. Using a service growth strategy starts with changing the value proposition and then identifies what that means for service provision, revenue flows, partnerships, and the capabilities of the firm.

Building on our co-operation with Volvo Trucks and service growth models developed by Heiko Gebauer and his research team, we have developed a model for service infusion growth; see Fig. 4.1. The model for service infusion growth is based on asking four basic questions:

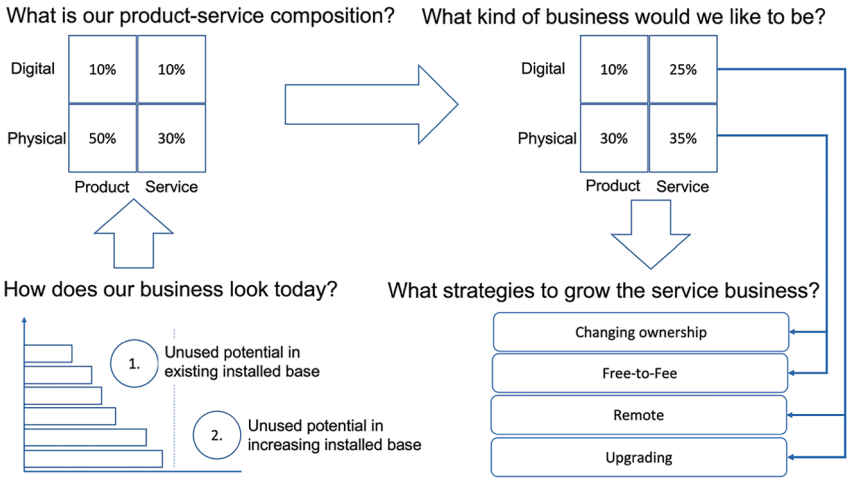

Fig. 4.1 Achieving service growth

- How does our business look today?
- What is the product-service composition?
- Where do we want to grow?
- What strategies should we use to grow the service business?

The idea is that answering these basic questions requires a lot of information about the present status of service infusion in a firm. This information will then help the firm develop the service infusion growth strategy to address its internal (organizational structure and capabilities) and external situation (market turbulence and technology change). We will now look at some core concepts that are needed in order to understand the present status of a business and develop a service infusion growth strategy.

First, the installed base refers to the total number of products currently under use by customers (Oliva & Kallenberg, 2003). The installed base is the key for building a service business since manufacturers are involved in the sales of new products and therefore have information about new equipment joining the installed base. In addition to information about each product in the installed base, service provision often requires special knowledge about the product and its technology. The manufacturer usually has an additional advantage as it has knowledge about the service requirements over a product's life cycle.

Second, an important theoretical concept is the product-service composition, which concerns how a large share of the turnover of a firm comes from services in relation to products. For example, the share of services is about 9 percent in Tesla, 22 percent for Apple, and 23 percent for Volvo Trucks. What product-service composition a firm should have depends on what strategic direction the manufacturer would like to develop and what type of services are provided. A European survey

performed in 2018 found that 38 percent of the firms in the study actually had a zero percent product-service composition.

Third, service infusion strategies that previously built on after-sales services (such as repair and maintenance) are becoming associated with the concept of digitalization. Digital servitization describes the strategic shift from selling products to providing product-service systems, in a way that value-in-use is created rather than value-in-exchange (Baines et al., 2017). Choosing a service infusion strategy involves a change in the business model to improve competitiveness, and in manufacturing firms digitalization might aid service infusion, creating new opportunities for services, platforms, intelligent products, and novel business models (Kohtamäki et al., 2021), which could ultimately increase the sales of digital services. Digital service infusion exploits digital technologies, data, and information to provide new services. The key assumption is that digital service infusion will provide opportunities for value co-creation with customers and value capture for the service provider. Co-operation between different actors in the service ecosystem may be a prerequisite for value co-creation through digital service infusion.

How Does Our Business Look Today?

The first step is to determine the status of the service business by identifying all products and services that are sold by different divisions on different markets. While the idea of many servitization models is to move all services under one organizational unit, the focus here is to identify them to enable an overview of what value propositions exist, both products and services. Based on what the overview reveals, two key directions for growth can be identified: (1) Unused potential in existing an installed base, and (2) unused potential in increasing an installed base. The first direction concerns increasing service sales to existing customers, which in practice means selling more of the services that the customer use today or trying to sell them more advanced services. These services often focus on providing value to the customer, with less focus on the product. The second direction concerns attempts to sell more products so that the installed base becomes larger. The same logic applies here; that is, the firm can attempt to sell more existing products or sell new products based on, for instance, more sustainable or novel technology.

What Is the Product-Service Composition?

In the early days of service infusion research, it was emphasized that firms needed to increase the share of services in their business and that the ideal product-service composition was 100 percent services, since that would generate the most profitable business. However, this has changed over time toward all firms needing to find the balance between products and services that best fit their business strategy. The provided value proposition can even differ between different customer segments, so that a manufacturer has different business models for providing a similar effect for

their customer. The value proposition involves making customers more successful by increasing the customer's efficiency and effectiveness. Products refer to things like machines and spare parts, while services refer to basic services such as financial and field services (repair, maintenance, etc.) as well as more advanced services such as equipment modernization, integration, and optimization services (Baines et al., 2017) and services for guaranteeing and charging for product usage and performance (such as pay-per-use services). In addition to separating between products and services, a manufacturer can also separate between physical and digital value propositions. What dimensions to include when determining the product-service composition depends on what the important growth dimensions are for the forthcoming service strategy.

To determine the product-service composition, a service matrix can be used based on a horizontal axis that distinguishes between product and service revenues, and a vertical axis that depicts the revenues generated through physical and digital offerings. Moving along the horizontal axis suggests that companies increasingly generate revenues from classical services, whereas moving up the vertical axis implies revenue enhancements through digital offerings (Gebauer et al., 2020). These digital offerings include digital products such as software as a premise or digital services. Digital services usually include advanced services, which increasingly take advantage of digital technologies and applications like software, sensors, and big data.

The example in Fig. 4.1 shows a typical product-service composition. Here, 50 percent of the revenue comes from products and 30 percent comes from traditional services. In addition, 10 percent of the revenues is made with software offerings and 10 percent with digital services.

Where Do We Want to Grow?

The next step is to consider how and in which dimensions a firm would like to grow its business. If a firm decides to decrease the service share of their turnover, it should choose a product technology or production excellence strategy. About 20 years ago, Ericsson Cables made such a decision to sell its service business and then outsource service provision to other firms. In a similar way as when deciding the product-service composition, a growth matrix is based on a horizontal axis that distinguishes between product and service revenues, whereas the vertical axis depicts the revenues generated through physical and digital offerings.

In Fig. 4.1, a long-term service growth strategy is suggested from 30 percent to 35 percent of the revenue for physical services and from 10 percent to 25 percent of the revenue for digital services. This means that revenue enhancements through digital offerings are expected to reach the highest growth rates. To be successful with service growth, firms must prepare themselves with relevant timeframes, indicators to support the transformation and resources.

Service Growth Strategies: Company Cases

Successfully developing services into a growing business by revenue and profitability may require a change of mindset within the organization. This includes capabilities like co-creation with other actors in the network (or supply chain), understanding customers' processes and driving forces, and the ability to establish long-term relationships with customers. While these capabilities might already be in place, a pure manufacturing company typically has its main skills focusing on the time, cost, and quality of its internal processes. In this transition it is necessary for the firm to make changes while still excelling in its core competencies.

Figure 4.1 describes two different areas for service growth: physical and digital. In each area, we present two different strategies for service growth (a total of four strategies); see Fig. 4.2. The service growth strategies, summarized in Table 4.1, aim to increase the company's revenue growth by charging for services, and in the long run supporting a profitable business. The strategies for physical services are defined as *free-to-fee* and *changing ownership*. The digital service strategies are named *remote* and *upgrading*.

The strategy of moving from offering established services for free to providing the same services with a price tag involves the challenge of gaining customer acceptance (Witell & Löfgren, 2013). Since providing services for free can be a strategy to gain customer loyalty, changing to charging is risky, and the customer might leave and take its business elsewhere (Mustak et al., 2023). For example, the company *Soundless* managed to convince its customer base to pay for services that had historically been free (Witell & Löfgren, 2013).

Soundless is a small and medium-sized company (SME) and in the automotive industry that supplies products to reduce noise in vehicles. Working with Original Equipment Manufacturers (OEMs) in development projects is resource-consuming, and the company rarely knows if it will get the final contract for producing the developed products. Realizing that it was giving away its main competence for free, *Soundless* joined forces with a larger company providing consultancy services and

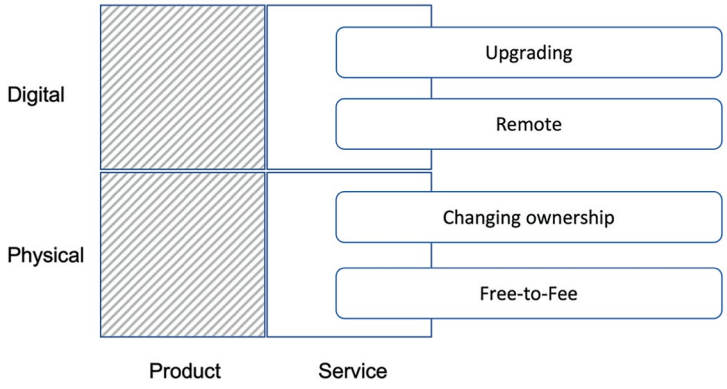

Fig. 4.2 Service growth strategies

Table 4.1 Service growth strategies

Service growth strategy	Description	Key characteristics	Illustrative company
Free-to-fee	Delivery of new and improved service together with a partner. The old service was for free, but a fee has now been introduced.	Adding a network partner to the service offer justifies the decision to charge the customer.	*Soundless* (Witell & Löfgren, 2013)
Changing ownership	Making a move in the value chain, from being a manufacturer of components owned by customers to complete ownership of design, production, and support.	Controlling the process of design, production, and support creates a competitive advantage compared to competitors in the industry.	*Air* (Magnusson & Odhe, 2022)
Remote	Product built-in sensors allow remote services to be developed and offered to customers for a fee.	Remote monitoring of product usage and performance gives the opportunity to offer preventive maintenance and specific services at times of low product usage, which improves product up-time.	*Barista*
Upgrading	Aftermarket sales to improve efficiency of the installed base at customer operations.	Assessing collected data to offer the customer an upgraded solution for their operations, based on payback on efficiency.	*Maritime*

lab resources. Forming a network with a partner offering tangible lab results justified *Soundless*'s decision to charge customers for its competence. When the network partner was introduced to customers, the value proposition became evident, and a major part of the customer base agreed to pay for the services. In this case there was no decline in capital sales, which is a risk when changing the business model from free-to-fee. *Soundless* managed to increase its revenue, while differentiating from their competition by offering R&D related services together with a network partner. Drawing on the terminology of (Gebauer et al., 2010), *Soundless* is characterized as a development partner.

The *changing ownership* strategy is primarily based on moving upstream in the value chain. A company develops skills and resources to not just manufacture products on customer drawings, but to develop them as well. This provides the opportunity to control the value chain to reduce production costs, and a product designed for efficient production for production, and the company can also benefit from controlling the installed base for aftermarket sales.

Our illustration is described in the case of *Air* (Magnusson & Odhe, 2022), a company manufacturing components in the aircraft industry. *Air* was positioned as a large make-to-print (MTP) manufacturing company. This means that the customers developed the product and owned the component drawings and *Air* focused on

the time, cost, and quality of producing these specified components. The company realized that its long-term survival required it to be part of the large development eco-systems that started to define the aircraft industry. *Air* changed from being an MTP to a design, produce, and support company, developing extensive design and engineering skills as well as the ability to focus on customer processes, value, and relationships. *Air* specialized in three main components, claiming ownership for design, production, and customer support. Supporting the installed base (for example, by providing spare parts and maintenance) generated long-term revenue. *Air* made necessary changes in its organization and mindset to extend its ownership of the components, but at the same time it had to maintain its historical focus on time, cost, and quality. Apart from improving customer loyalty and differentiating itself from its competition, *Air* managed to decrease revenue volatility by supporting the installed base over time. Again following (Gebauer et al., 2010) terminology, *Air* is a development partner.

We now move to strategies based on digitalization and the business opportunities addressed by digital servitization. Products containing sensors and other remote-controlled equipment open up the service business for new services. Product costs usually increase since IoT components are added and sometimes new skills and competences have to be developed in the manufacturing firm to pursue the remote strategy.

Barista is a small OEM of advanced coffee machines, mainly for commercial use. Its partners are located globally, but the majority of its products are installed in Europe. Early on, *Barista* equipped its machines with sensors so that it could monitor product performance. Collecting data from the machines gives *Barista* the opportunity to track the performance of the products over time as an input to new product development, but also to improve customer value. Monitoring the machines on a component performance level gives indications for preventive maintenance. When the performance of selected components is too low, Barista can alert the customer that maintenance of the equipment is needed. The company can also provide an estimate of costs and time needed for the maintenance. Since the coffee machines are also monitored on a usage level, *Barista* can offer spare parts and maintenance to the customer at times when the equipment has low usage, which improves customer value. Again, services generate customer loyalty and reduce revenue volatility. In this case, *Barista* is also improving machine up-time and prolonging the lifetime of the equipment, which can be seen as an environmental improvement. From a strategy-based model view, *Barista* is an after-sales service provider (Gebauer et al., 2010).

Finally, the fourth strategy, also connected to digitalization, is *upgrading*. Based on data collected by a company or by a third party, assessments on customer equipment can be made and customized offers can be made to improve the efficiency of the product. All ships of a certain size use AIS (automatic identification system) transponders where data like size, identification, course, and speed can be monitored. *Seasearcher* and *Marine Traffic* are websites used for the monitoring. The global acting company *Maritime* has a large installed base for its propulsion equipment on ships that can be monitored by the AIS system. Especially interesting is the

speed of the ships and how they are operated. If the operational speed deviates from the speed that the propulsion equipment was designed for, *Maritime* can offer an upgrading of the equipment, supporting the new operational case. This helps customers reduce the fuel consumption and prolong the product life cycle and we portray *Maritime* as a customer support service provider, according to Gebauer et al. (2010).

Conclusions

This chapter discusses the concept of service growth and suggests that a manufacturing firm needs to evaluate its current situation in order to build the right service strategy for service growth. Depending on the size of the installed base, the product-service composition and degree of digitalization a firm needs to adopt supports different growth strategies. We have illustrated the role of four potential growth strategies:

- Free-to-Fee.
- Changing ownership.
- Remote.
- Upgrading.

In particular, the *free-to-fee* strategy can initiate the transformation from a product-centric to a service-centric business model. The *changing ownership*, *remote,* and *upgrading* strategies are more advanced services that often require the introduction of new capabilities or organizational arrangements. Although there are several more alternative service strategies, the four identified service strategies play different roles in creating service growth.

The suggested model for service growth represents a mid-range theory for servitization that suggests how manufacturing firms could address the present situation on the market to develop the right service strategy. Although research on servitization can be rather managerial, it is often descriptive and focuses on describing the situation for firms that have been studied through retrospective case studies. In contrast, this chapter provides a managerial model that is prescriptive; that is, it provides managerial guidelines on how to address the strategic process of servitization.

Returning to the situation of the CEO in the introduction, this chapter provides a framework for a firm to start growing its business through adopting new service growth strategies. You may thank *Siri* for the advice to servitize your business, but request more details. You ask, “I have now adopted servitization, but how shall I grow my service business?” *Siri* answers, “Please read the book chapter on Strategies for Service Growth by Odhe, Padhi and Witell, there you will find what you are searching for.”

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Value Co-creation Through Collaboration: The Case of Efficient Load Out

5

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Abstract

Using the case of efficient load out (ELO), a digital solution offered by Volvo Group, this chapter illustrates how activities can lead to a service-oriented value co-creation approach among actors during the development of a digital solution. In particular, activities performed in the ELO project focused on the customer's process, collaboration, and creating a win-win solution. Adopting these new dimensions of a service-oriented value co-creation approach resulted in outcomes for the actors that were directly involved in the project and for those actors experiencing the result. By broadening the scope from the company to the ecosystem, the digital solution became applicable, and deeper relationships were created with customers. The company gained specific domain competence and increased its competitive advantages.

Key Takeaways

- Broadening the scope from the company to the ecosystem can create new opportunities for value co-creation among actors.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_5

- Focusing on the customer's process, collaboration, and the creation of a win-win solution improves the applicability of the solution, creating deeper relationships with customers and specific domain competence, which leads to competitive advantages.
- Co-created value exceeds the focal actors by also gaining the peripheral actors, for example, in terms of sustainability.

Introduction

> "I think that if you're going to develop services, you have to do it together. A service is something that someone needs for their business, so you have to understand that business. That's probably why we have so few services in our industry. I would imagine that you never get that close to each other." (Manager, NCC)

Collaboration is required to enable actors from different organizations to work in close relationships. Radical changes in collaboration are created from the widespread use of digital technologies in business activities, enabled by changes in products, service provision, and resource integration activities. However, these collaboration opportunities should result in new profitable solutions. Combining digitalization and servitization (Parida et al., 2019) in what is called digital servitization gives firms the possibility to move from product-centric business models to digital, service-oriented ones, with higher value-generating potential. Therefore, manufacturers adopt digital servitization partly to explore new revenue streams in collaboration with partners and customers (Parida et al., 2019).

The opportunities to expand revenue streams increase when firms align products, service provision, connectivity, and data analytics into service ecosystems. A service ecosystem can be defined as "a relatively self-contained, self-adjusting system of resource-integrating actors connected by shared institutional arrangements and mutual value creation through service exchange" (Lusch & Vargo, 2014, p. 161). Consequently, understanding value co-creation processes in successful digital solutions is vital and includes the customer and other partners as value co-creators (Vargo & Lusch, 2008). Value co-creation implies that the provider, the customer, and other partners actively co-create value through direct and indirect interaction to realize the promise of digital servitization. Thus, the interaction among actors in the service ecosystem is transformed from a transaction-based to a relationship-based collaboration (Tronvoll et al., 2020).

In this way, digital servitization changes the value propositions and alters how firms co-create value. This is done through collaboration with partners in the service ecosystem to meet the customers' evolving needs (Iansiti & Lakhani, 2014). However, rapid digital innovation requires changes in the way the relationships are orchestrated in the service ecosystem by adopting new and innovative value co-creation approaches (Iansiti & Lakhani, 2014). For manufacturing firms that offer products, co-creating value with other actors in the ecosystem can be challenging, simply because they are not used to collaborating in this way, and can sometimes

even contradict the business logic of the firm. Offering a digital solution can be very different from selling a physical product.

Traditional engineering companies, such as vehicle manufacturers, typically have a product-oriented approach to value creation, prioritizing the technical characteristics of the goods they produce. This orientation is often rooted in the engineering culture, which values precision, efficiency, and functionality. As a result, traditional engineering companies prioritize technical excellence over other factors, such as customer involvement or experience, when developing new solutions. In a product-oriented company, engineering firms may view a product as a set of technical specifications that must be met rather than a solution to a specific customer need. Consequently, a change to a service-oriented value co-creation approach can enable collaboration with customers and other actors to meet their requirements.

In this chapter, we use a narrative lens to discuss one such change toward a service-oriented value co-creation approach. We focus on understanding the collaborating and value co-creating actors, resulting in a digital solution at Volvo Group: efficient load out (ELO). ELO is an integrated part of a large ongoing transport infrastructure project in which a railway tunnel is being built under the city center of Gothenburg. The idea of ELO was to connect information flows in the production process to optimize truck loads and obtain real-time information. In other words, ELO is a digital solution for more efficient loading and transportation of cargo, which enables the sharing of information, facilitates exchanges, and monitors, controls, and optimizes the process at the construction site. In this chapter, we use the development of ELO to illustrate how activities can lead to a service-oriented value co-creation approach among actors during the development of a digital solution. We will also discuss the outcomes of this approach. Through this case illustration, we aim to provide insights and recommendations on effectively engaging actors in value co-creation and enhancing digital solutions development.

The Digital Solution for Efficient Load Out

We adopt a narrative lens and envisage the dynamic and idiosyncratic emergent process of developing a solution such as the ELO project. A narrative lens helps to understand the plots that organize the events, actions, and communication that constitute the development process (Polkinghorne, 1995). Because narratives are dynamic, dialogic, and co-constructed, they capture the temporal dimension of the process as the individual's project stories unfold. Besides, the narrative style contributes to a fuller understanding of how interactions influence the development process of the solution. The narrative described below is told by people involved in the project team of ELO and emphasizes their view of the process. First, the actors' characteristics and the ecosystem of ELO are described, and then the narratives are organized around four different dimensions of a service-oriented value co-creation approach: a focus on the customer's process, collaboration, a win-win solution, and influence on the broader ecosystem. These four dimensions are emphasized because they emerged as the central dimensions in the stories told.

Actors' Characteristics and the Ecosystem of ELO

The ELO project was developed as a digital solution within a construction project part of the West Link in Gothenburg, Sweden. The Swedish Transport Administration initiated the project, and one section of the railway tunnel was built by NCC, a large construction company in the Nordic countries. Much attention was given to excavating and transporting mud and soil from the future tunnel. Several subcontractors, including excavation and transportation companies, were involved in that work.

Because the construction site was located in a busy part of the city, the project needed to be conducted with minimal impact on the community. NCC and Volvo Group started a discussion on how to develop a digital solution to optimize the loading of trucks, with a focus on connecting information flows and obtaining real-time information. Consequently, the excavator operators could know precisely how much they should load on each truck, and the truck driver knows exactly how much cargo was loaded and which landfill to go to, making it possible for production managers to identify any deviation and continuously adjust the process as needed.

Table 5.1 shows the names, descriptions, and roles of actors that were involved in, or affected by, the development of ELO. Some actors collaborated in developing the solution and found new ways of working, resulting in a solution that has generated outcomes beyond the single act of loading, influencing other actors in the ecosystem. These actors adopted a service-oriented value co-creation approach through the activities they performed, as shown in Table 5.1.

A Focus on the Customer's Process

At the time ELO was initiated, there was generally an increased focus on developing solutions and finding new business models within Volvo Group. For example, a division for digital solutions was created, in which employees were expected to think differently. One way was to collaborate directly with end customers and discuss the challenges at hand in order to understand and focus on the customers' needs. In this sense, the needs were not necessarily related to the trucks or excavators per se, but rather to the process in which they were used. This, and similar internal investments, meant that people at Volvo Group opened their minds to new forms of collaboration. At the same time, they abandoned the view of being stuck in a particular position in the linear value chain and instead adopted a view of being part of a service ecosystem. It opened the way to develop new types of services with various actors.

Actors involved in the development process of ELO needed to abandon the traditional product development mindset. Since ELO was developed in conjunction with the customer from the very beginning and at the same time tested on an ongoing construction project, the solution to launch was developed as an agile process. The project started with a limited task to fulfill, and other parts were added during the process as the need arose. This shifted how products and services were usually launched at Volvo Group. For example, for the educational material to the salesforce

Table 5.1 Names, descriptions, and roles of ecosystem actors involved in, or affected by, the development of ELO

Actor name	Description	Role in the development of ELO
Volvo CE	Manufacturer of construction equipment	Volvo Group, the service provider and owner of ELO
Volvo Trucks	Manufacturer of trucks	
Volvo Group Connected Solutions	Part of the Volvo Group that develop connected services and solutions	
CPAC Systems	Volvo Group company that develops technical systems and services	
Global Load Out Solutions	A Volvo Group company that started to own and sell ELO	
NCC	Construction company	Customer of ELO
VSM	Excavation company	Supplier to NCC
Samgräv	Transportation company	Supplier to VSM
Reference group	A group of experienced industry people	Advisory board
Transportation companies	Provide heavy transport	Subcontractors
Excavation companies	Provide excavation	Subcontractors
The Swedish Transport Administration	Authority responsible for the long-term planning of the transport system	Responsible authority; initiators of the West Link project
Landfills	Provide disposal of waste material	Supplier to NCC
Visitors	People visiting the city	Influenced by the effects of ELO
Citizens	People living in the city	Influenced by the effects of ELO

to be adaptable, it needed to be up-to-date and easy to adjust, while it consisted of videos rather than written material. Changing the norms and ways of doing business is usually tricky, and one manager in the project team said: "*... this is new, and I can say I fight more internally than externally.*"

All these activities can be summarized as one dimension of a service-oriented value co-creation approach in Volvo Group, namely a *focus on the customer's process*. By engaging in the customers' process and hence letting the customer influence future solutions, they understood that the solution developed together with NCC would be valuable and in demand. However, during the development process, Volvo Group faced challenges when their engineers fell back into old ways of working. Occasionally, they would introduce new ideas without consulting the customer to ensure they aligned with their needs. Equally, there was a risk that the engineers listened too much to customer requests, and maintaining this balance indicated a challenging endeavor: "*I've been in this business for a long time, so I know that you should listen and then evaluate yourself, if it is important or not. You should not take for granted that what the customer wants is what he really says*" (Manager, Volvo

Group). However, the value co-creation approach of focusing on the customer's process contributed to the outcome of an *applicable solution*.

Collaboration

The focus on the customer's process also influenced the relationships as new types of collaborations were initiated among the actors in a joint project group. The project team consisted of managers from Volvo Group and NCC (Volvo Group's customer). To achieve openness and trust in this team of collaborating actors, it was considered essential to include the "right" people in the project team, including people who can see future business opportunities. Their personalities needed to be extroverted and social, since knowledge sharing and dialogue were central to understanding the customer's process in detail. Moreover, the project team was kept relatively small, and only people with specific and necessary knowledge were included. In addition, individuals who could create engagement within their own organizations were selected.

Practical experts from suppliers, such as VSM and Samgräv, were also closely involved in the development as they had deep practical understanding and experience from the transport and excavation process and were able to add value during the development phase. A representative from Volvo Group had weekly meetings with these companies trying ELO in their daily work to evaluate and refine the solution. As one manager at Volvo CE expressed: *"This transparent situation that we've had, or this collaboration that we've had, you can cooperate with anyone, but when you collaborate, you are exchanging and sharing your expertise. I would say that it has been a common thread throughout the entire development process* [of ELO]*."* A nondisclosure agreement was signed so that these people were able to exchange knowledge and share their problems and needs, but it was considered necessary to also collaborate without a legal contract. "*When you are in a project, and there is a contractual relationship, then you can't talk about everything*." Nevertheless, some actors in the ecosystem would not enter the collaboration without a contract, which was why ELO did not fulfill all actors' needs. Consequently, the desired level of openness and trust, critical to such collaborations, could not be established with these particular actors.

An external reference group of experts in the field was also consulted to gain confidence that the digital solution would be useful and in demand. The reference group was involved in testing prototypes of ELO in different stages of development and provided Volvo Group with valuable feedback and insights. Again, the continuous dialogue between different actors greatly benefited Volvo Group, knowing that their customers would truly need what they developed. At the same time, NCC could influence the content of the solution.

These activities are summarized in another dimension of a service-oriented value co-creation approach referred to as *collaboration*. Taken together, these activities resulting in this close collaboration deepened the actor's relationships, giving valuable input to their respective businesses. There were also marketing benefits; for

Volvo Group, the advantages of the solution could be described by a customer who tried it, while NCC had the opportunity to show its name and operations when potential ELO customers visited the West Link to get a demonstration of the solution. Hence, collaboration was one dimension that led to the outcome of *relationship building*.

A Win-Win Solution

Close collaboration between actors other than Volvo Group and NCC required some extra work. Initially, the core project team sought to involve actors to be motivated to use ELO. NCC is the customer buying ELO from Volvo Group and can have ELO as a requirement when procuring subcontractors. However, without creating this motivation among actors, it would not have been easy to explain why, for instance, each excavation company would have to buy hardware (installing scales on their machines). The actors had to be involved and motivated to understand that without installing the scale, they could not participate and earn extra money. Through open and continuous dialogue throughout the development project, more actors got involved and started to use ELO, e.g., Samgräv and VSM. The actual use of ELO implied that a number of activities were performed that also influenced the shift toward a service-oriented value co-creation approach among actors in the ecosystem.

The loading process was previously done with pen and paper, but is now digitalized and automated. As expected, it has increased the optimization of production flows, increased safety at the construction site, facilitated the planning, follow-up, and control, increased the likelihood that the project stayed on schedule, and generated more accurate data for decision-making. The transportation company had less administration due to the automated information flows, and the optimization of truck loads reduced the risk of getting fined by the road authorities. Another example was the experience of Samgräv, which is responsible for the logistics of trucks at and around the construction site. That company obtained real-time information about where the trucks were located, facilitating its work and reducing the need to communicate by phone. All of the updated information that ELO provides the actors in the ecosystem, including those not directly involved in the development project, enables a more accurate process, leading to increased productivity, sustainability, and profitability. It also reduced the number of truck transports and, consequently, the fuel consumption and CO_2 emissions. The operators and drivers at the excavation and transportation companies were also more satisfied: "*Excavator operators and truck drivers want to dig or drive; they don't want to be administrators. They are really happy that they just need to press two-three buttons on a tablet or mobile and everything is solved.*"

As ELO continued to be developed, activities were also identified as influencing actors that were not directly involved in the development project. For example, the Swedish Transport Administration learned how much the trucks unload at the landfills. NCC has a number of construction projects going on simultaneously; information from all the projects could be automatically compiled. At the same time,

information could be sent out to truck drivers, for example, about which landfill to go to depending on the type of load, which reduced the number of misruns. This becomes essential since the loadings contain different materials, some of which are environmentally hazardous; therefore, they must end up in the proper landfill.

Having identified these activities that were of value to the companies using ELO, the project team considered how ELO would be offered to customers in the future. Since construction projects and customers can be of various sizes, it was decided early on that the solution needed to be scalable. Volvo Group wanted a service that could be used in all kinds of construction projects, whereas NCC found it essential to only get the necessary features. NCC decided to modularize the solution so that customers could choose and only pay for the modules needed. It was also decided that ELO would be offered as a subscription (ELO as a service), meaning that the customer only pays for the solution as long as the construction project is ongoing, making the entry level low since it can be turned off at any time. Finally, to broaden the market, Volvo Group decided not to brand ELO under the name of Volvo, but to create a separate company (Global Load Out Solutions) that would make sales of the solution and future developments. *"If you create a service that is brand-neutral and that can be applicable on all excavators and all trucks in this case ... then you have opened up a whole new market as a potential business area."*

All of these activities are summarized in the dimension of a service-oriented value co-creation approach that we call *a win-win solution.* Throughout the project, the project team's service-oriented mindset meant that it wanted to create a win-win situation for all involved actors. This was a success factor since: *"No one could ever say that 'it was better before."* Identifying and visualizing the value co-created among all actors in the ecosystem in this way resulted in, for example, the outcome of *specific domain competence* as the actors' efforts in creating a win-win solution increased their collaboration and consequently their knowledge and competence. Moreover, an outcome of increased *competitive advantage* was expected.

Influence on the Broader Ecosystem

ELO also influenced citizens and other people visiting Gothenburg. Without them knowing, they could experience fewer trucks in the city center, increased safety, decreased noise, and less tax money spent for road repairs, than would have been the case without ELO. One manager argued, "*Now we can also claim that thanks to using the trucks to the full, we save almost 8000 transports from the project. And it's already quite crowded with the traffic around the railway station at the moment.*" Reducing the amount of truck transportation not only influences the surrounding environment for the people in the city, but also impacts carbon emissions. Transport constitutes a significant part of the carbon emissions at a construction site.

The dimension of the service-oriented value co-creation approach called *influence on the broader ecosystem* shows that companies are aware of how their solutions impact other actors that are not directly involved in the solution. In the case of ELO, this resulted in *sustainability*, covering social, economic, and environmental

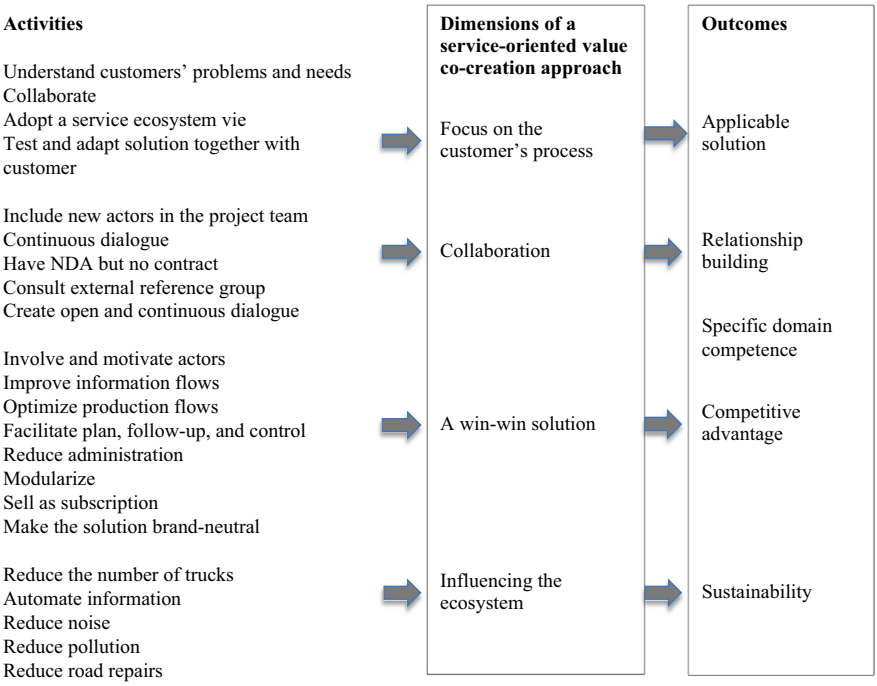

Fig. 5.1 Activities in the development project of ELO building up the dimensions of a service-oriented value co-creation approach resulting in a number of outcomes

aspects. Figure 5.1 shows a summary of the described activities, the dimensions of a service-oriented value co-creation approach, and the outcomes of adopting this approach.

Discussion

The development of ELO shows how the actors initiating the project collaborated in new constellations and, through concrete activities, adopted a service-oriented value co-creation approach, leading to intended and unintended outcomes. The inner circle of Fig. 5.2 shows the core project team of Volvo Group and NCC, as well as other organizations that worked actively together to develop the digital solution, hence referred to as the focal actors. The service-oriented approach used to co-create value resulted in the following outcomes: the applicable solution, relationship building, development of specific domain competence, and competitive advantage. So why do companies offering digital solutions need a service-oriented value co-creation approach to reach the outcomes?

There are various examples of (digital) solutions that have been unprofitable. Through a service-oriented value co-creation approach, the perspective is broadened from the focus being on the company to being more customer- and

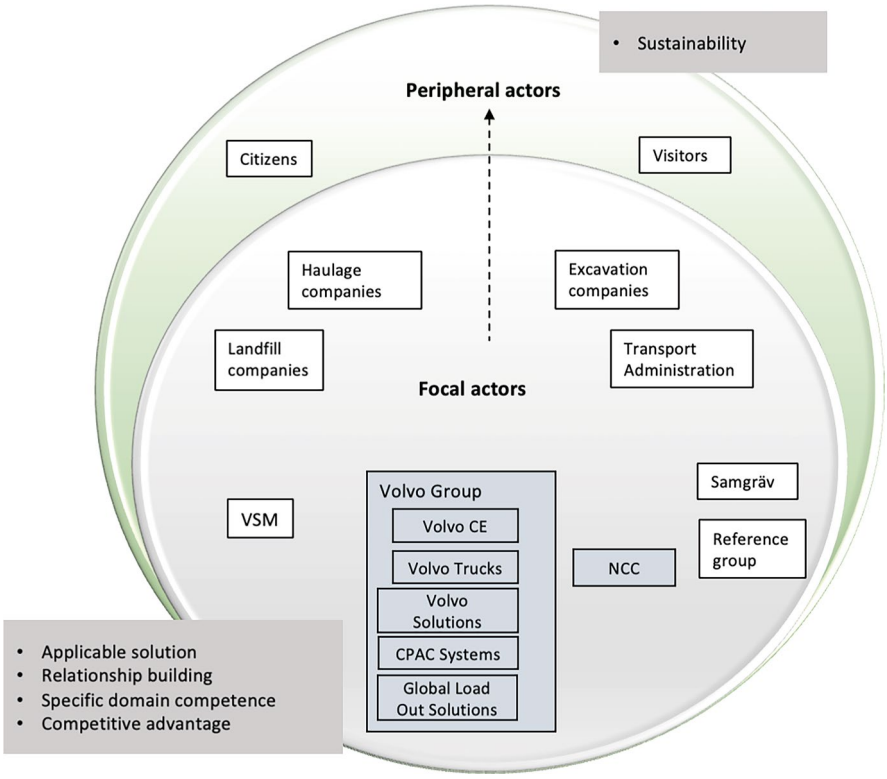

Fig. 5.2 Outcomes of a service-oriented value co-creation approach experienced by the focal actors and affecting peripheral ones

ecosystem-centric. By focusing on the customers' (and other actors') processes, collaborating closely with these actors in the ecosystem, and creating a win-win solution for all actors involved, the applicability of the digital solution increases. By changing the focus to the process in which the product is used, the company no longer focuses only on the product itself. Consequently, new business opportunities emerge, and the business horizon expands as the solution is relevant and useful for the customer and their customers again. Moreover, the company offering the solution does not have to "guess" what the customer wants, while the close collaboration and the relationship building deepen its understanding.

The service-oriented value co-creation approach brings relationship building to a deeper level than is usually found in traditional product-oriented companies characterized by openness, trust, and continuous communication, which has proven necessary to succeed with digital solutions (Hunt & Morgan, 1995). Close collaboration empowers firms to leverage each other's strengths and overcome challenges, which is important for actors from different organizations to develop digital solutions for efficient value co-creation. Firms that leverage this new (for them) approach to value co-creation through a digital solution, as the actors involved in ELO did, can

build strong relationships, enhance their value propositions, and drive sustainable growth and profitability. Understanding the customers' processes and having a close collaboration makes it less beneficial for the customer to change suppliers.

The deep knowledge of the customer's process results in specific domain competence, and new value propositions for competitive advantages can be developed. Digital solutions are often complex, and deep knowledge and domain competence appear to be central in the creation of a profitable, digital, solution. By creating a win-win solution, benefits are sought for all actors involved in a development process and future customers. This is not always true in traditional product-oriented ecosystems where powerful OEMs might state the conditions. However, by creating a win-win solution, the value with the customer becomes clear, and there is greater focus emphasizing this value.

The outer circle of Fig. 5.2 shows the peripheral actors: citizens and visitors. These actors take a distant part of value co-creation through the effect of a digital solution; in the ELO case, the outcome was social, economic, and environmental sustainability. The project resulted in fewer trucks operating around the construction site. This would not have been the case without ELO, which means that, for example, the well-being of people might have been better, the amount of tax money used for road wear was likely reduced, and the pollution in the area decreased. The peripheral actors' experience of value by just being in this area was influenced even without them knowing it. From a company's perspective, the influence on the broader ecosystem and the related outcomes can be used to improve the value proposition or create competitive advantages. In the case of ELO, for example, it created a great foundation for communicating the company's focus on sustainability. Therefore, including the outcomes created for peripheral actors can increase the value the digital solution creates.

Conclusion

This chapter has focused on the development of ELO to illustrate how activities can lead to a service-oriented value co-creation approach and outcomes among actors while developing a digital solution. Taking a step back and allowing a broader scope is likely to enhance the possibilities of creating a digital solution that efficiently co-creates value among several actors. We have illustrated a number of activities leading to a service-oriented value co-creation approach in the ecosystem, making it possible for value co-creation to occur between different actors and across the levels of aggregation in the ecosystem. This holistic scope applies to understanding how a particular context (e.g., a construction site) functions and how the whole ecosystem is influenced. Specifically, how actors that are not directly involved in the digital solution still take advantage of the effects the digital solution co-creates. Here, the *co-creation* of value needs to be emphasized. The outcomes are improved and influenced positively by a focus on value co-creation rather than value creation. For digital solutions that are often complex to develop and implement, this can be key to

reaching the intended outcomes and increase the likelihood of creating a profitable solution.

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Configure to Conquer: Implementing Configurators to Improve Competitiveness

6

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Abstract

Recent advancements in technology have created new possibilities for customizing product design without significantly changing the costs of production. By using so-called configurators, which are a form of platform-based technology, firms now have the means to customize products more efficiently. Previous research has mainly focused on the technical side of configurators, whereas the business and organizational issues involved during their introduction are much less understood. The purpose of this chapter is to explore the challenges of adopting configurators in an organization. We combine a literature review from 1980 to the present with findings from an empirical study of a newly developed sales configurator for maritime components.

Key Takeaways

- Implementing configurators in the quotation process can result in reduced lead time from RFQ to sending a quotation back to customers, lower production costs, increased overall quality, and higher customer satisfaction in the sales process.
- Adopting configurators in an organization is more than just a technical project, as it requires a change in mindset and an organizational change project.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_6

Management must have a clear and communicated strategy for how the change is to be implemented in order to minimize resistance.
- A reliable supplier relationship is crucial when using a configurator, as the pricing process is automated and dependent on updated price lists for the components included in the offered products. To avoid delivery delays, management must take measures to handle potential bottlenecks.
- Offering both configured products and one-off designs in parallel may create a dilemma for customers who want to make changes outside the boundaries of the configurator. Managers must develop policies for how to handle this, either by offering a strict policy or by allowing for modifications at an extra cost.

Introduction

Many organizations that operate in technically complex B2B contexts offer their products and services customized in a "one-off design" (OOD) manner, meaning that each customer request becomes an individual tailor-made solution. The request for quotation (RFQ) process often requires a considerable number of iterations between manufacturer and customer. This is normally a time-consuming process that approximately can take up to two or three months (or even longer). Besides the salesperson, technical design specialists are normally involved. Despite it being a time- and labor-consuming process, this business model has traditionally accomplished high sales margins due to customized offerings combined with high prices (Gilmore & Pine, 1997). Accordingly, the interest in addressing lower margin segments, which focus more on standardized solutions, is often discarded by these manufacturers.

However, advancements in technology have opened up possibilities for customizing design without significantly changing the costs of production (Weller et al., 2015). By using so-called *configurators*, firms now have the means to more resource efficiently accomplish customized offerings. The configurator normally comes with a more limited solutions space than do the traditional OOD. However, the customized configured solution is often good enough for many customers. A configurator is essentially a platform that can produce a "good enough design" based on the customer's requirements. Thus, it can replace the technical design specialists in the RFQ process, reducing both labor cost and lead time. Furthermore, a configurator, linked to updated pricelists, can also produce a recommended price for the offering. The compilation of an RFQ can, with a configurator, ideally be reduced from months to a few hours. The drawback is that the reduced solution space does not enable fully customized and optimized solutions. Thus, the configured offerings are not substitutes for OOD but complements that address specific customer segments and markets (Fogliatto et al., 2012).

As configurators have become increasingly advanced, they have become able to manage increasingly complex designs; thus, the gap between OOD and a configured product has been reduced and will be even further reduced. Accordingly, configurators are about to change the business landscape. Even OOD manufacturers with

high margins must learn and understand the opportunities—such as reduced lead times and cost—that this new digital technology creates. Previous research has mainly focused on the internal technical design of configurators, but the business and organizational issues when introducing them are much less understood. The *purpose of this chapter is to explore the challenges with adopting configurators in an organization*. The chapter focuses on configurators for use in the sales process in technically complex B2B contexts. The sales process is understood here as the process that starts with a customer submitting a request for quotation (RFQ), resulting in a quotation encompassing a design proposal, with a price and a delivery time. Thus, it can be regarded as a combination of sale and design. After reading the chapter the reader will be more informed, not only about the possibilities with configurators, but also the organizational challenges that managers face when adopting configurator technologies.

The remainder of this chapter is structured as follows. First, a *literature review* covers two important aspects of configurators, namely, the *emergence and opportunities,* but also the *challenges* it brings to the organization implementing and using it. We then shift our attention to the *empirical study* of a newly developed sales configurator for maritime components. Finally, the *outcomes from the study are discussed and concluded* in the light of the literature review.

The Emergence and Opportunities of Configurators

Product configurators, also known as tool kits (von Hippel, 2001), first appeared in the 1980s (Trentin et al., 2014). A configurator enables consumers to easily and rapidly create their ideal product solution by selecting various options before making their final purchase decision. In essence, a configurator can be described as a software application that supports interactions between customers and salespeople to generate specific solutions based on a company's product or service offerings (Mahlamäki et al., 2020). An example of a configurator is IKEA's kitchen planner, in which customers can quickly get an idea of what the final kitchen will look like and its cost. Hence, already at the planning stage the customer and the supplier both have a clear idea of the final product outcome, including the expected price and delivery time as well as design drawings. From a customer's perspective, a configurator can reduce lead time and cost linked to the RFQ. Thus, the use of a configurator can become a competitive advantage in terms of attracting customers for firms that implement it in their RFQ processes.

Focusing further on the supply-side perspective, configurators can be used to internally streamline and increase efficiency in the sales process. Sales staff, design engineers, and production and process engineers can all benefit from using configurators. For example, sales staff can use configurators to quickly generate quotations or sales drawings (Zhang & Shafiee, 2022). From an engineering perspective, configurators can help generate technical documents, engineering drawings of components, routings, manufacturing sequences, and so on (MacCarthy, 2013). Configurators also offer ways to incorporate and embed knowledge that must

otherwise be retained by individual employees (or as manual processes), such as design and calculation of product costs (Hvam et al., 2006). This can reduce the risk of key individuals quitting their jobs and joining a competitor. Thus, the ability to improve the sales process is a driver for firms to adopt configurators. Improving quality, while simultaneously reducing lead times and cost, is another important aspect of developing and adopting a configurator.

The quality gains are generated from, among other things, improved communication in the RFQ process, since significantly less time is wasted on activities such as design iterations. As soon as the configurator is provided with the necessary inputs, it can directly return correct outputs in the form of, for example, designs, technical drawings, prices, and time estimates for production. In addition, the clear and compiled output (i.e., what is being communicated), from the configurator also reduces the risk of human mistakes, which also improves the overall quality in the RFQ process. Studies have shown that mistakes based on errors in communication, such as when iterating customer requests back and forth, account for over 5 percent of revenue losses (Aldanondo, 2000). Without a configurator, precious time risks being wasted by the employees, as they wait for a reply or feedback from other employees or the customer, resulting in inefficiency. With the use of a configurator, companies can increase their ability to generate RFQ quickly and increase their chances of closing deals, which can potentially increase their revenues (Hvam et al., 2006). Studies have shown that the usage of configurators implies a major lead time reduction for the generation of quotes, and nearly 80 percent in average man-hours savings in engineering-oriented companies (Haug et al., 2011).

To summarize, configurators make it possible to generate quotations quickly without increasing the number of employees. This reduces the need for support from technical experts in the sales process. Thus, configurators can increase sales efficiency and overall quality and customer satisfaction while reducing lead time and cost. The needs of the customers are fulfilled using a configurator in industrial markets where somewhat more rational reasoning and buying behavior with speed and accuracy are appreciated, as it saves their time, money, and effort (Makipaa et al., 2012).

Challenges When Adopting Configurators

While it may look as though every firm producing and selling goods and services should innovate and adopt configurators in its business, this is not a simple thing to do. Even if configurators have great potential to improve organizations' sales processes, several challenges exist when implementing and adopting them. However, these challenges have not been addressed to the same extent as the advantages (Haug et al., 2012). From a managerial perspective, organizational challenges are often highlighted as the most important parts to manage during an adoption or implementation process. When adopting a new configurator, three broad perspectives can be highlighted, relating to *employees*, *competences,* and the provided *resources*.

Employee-Related Challenges

Introducing configurators implies new ways of working, and resistance from employees is often a natural reaction (Pardo del Val & Martinez Fuentes, 2003). Individuals who resist change are often comfortable with their existing ways of working (Waddell & Sohal, 1998). Implementing new routines requires them to change the way they have been working (often for years), learn new skills, and sometimes also introduce a new culture. Hence, managers need to strategically prioritize configurator-related activities so that their intended use is made clear and communicated to affected employees. For instance, if the aim is to accomplish internal efficiency gains in the sales processes, then it is crucial to gain acceptance among the sales staff. Therefore, it is essential to develop a clear strategic vision and communication to reduce the risk of confusion, misunderstandings, and resistance to change among those affected (Waddell & Sohal, 1998). Apart from mastering potential resistance to change, management must also handle questions relating to knowledge and competences.

Competence-Related Challenges

Challenges that are directly linked to a newly developed configurator that is being implemented are those relating to competences. While several different competences are needed during the actual development phase (such as technical knowledge), other skills are also needed when implementing the configurator. For example, adopting a configurator will require new competences linked to daily usage (such as training of sales staff) and maintenance (Buchanan et al., 2005). Thus, from a managerial perspective it is important to ensure that key individuals with either specific or holistic knowledge and competence regarding the configurator are looked after. If not, the development, implementation, or adoption phase could be hampered (Kristjansdottir et al., 2018). Another question that needs to be addressed is whether the configurator should be managed and maintained by an internal team or whether it should be outsourced. The question is a double-edged sword in several ways. On the one hand, knowledge transfers could arguably be achieved more easily if the knowledge is kept in-house. On the other hand, there is a cost aspect that can influence the final decision. Having in-house experts only focus on the configurator could become expensive and also increase the risk of sudden knowledge loss if they were to leave the organization.

In terms of the daily operations and usage of the configurator, organizations must ensure that the interface of the configurator matches the intended user's skills and competence levels. For example, if the intended user is an internal sales representative, then the user interface might be different compared to an end-user interface, due to knowledge differences. Therefore, the configurator must be designed with an in-depth understanding of the specific user needs and preferences. Failure to understand the user needs may lead to a poorly designed configurator that does not meet their requirements (Ardissono et al., 2003). Hence, if the configurator is mainly

intended for salespeople, this group should be made part of the development process (which could also lower their potential resistance to it). Also, proper training and support are important to ensure that users understand the configurator's capabilities and use it effectively. The latter must also be part of the adoption process, to increase the likelihood of successful implementation (Kristjansdottir et al., 2018). With these employee- and competence-related challenges in mind, we now turn to the final challenge: the need for resources.

Resource-Related Challenges

Since all changes in an organization require time and resources, management commitment and support are crucial for long-term success (Sirkin et al., 2005). Therefore, strategic resource allocation to the actual development and maintenance (of a configurator) is important (Ariano & Dagnino, 1996). The cost of developing and implementing a new configurator can be significant and organizations must carefully evaluate the cost-benefit ratio before making such an investment. This also includes maintenance-related costs, since a configurator requires ongoing maintenance in order for it to remain up-to-date and functional. As products become more complex and customizable, a configurator must also be programmed in such a way that dependencies are not overlooked (Forza & Salvador, 2002). More customizability (in terms of choices) will likely increase costs. Thus, resources need to be allocated to ensure that, for example, design updates (in the product or service) or changes in manufacturing are updated in the configurator.

In conclusion, introducing a new configurator requires resources, commitment (both from management and affected employees), and competence. Organizations need to address these challenges through the development, implementation, and adoption of a configurator. With this brief introduction to the origin, possibilities, and challenges, we now turn our attention to Kongsberg Maritime and its experience of introducing a new configurator.

Introducing a Configurator in Practice: The Kongsberg Case

The case is based on 18 interviews with employees at different levels at Kongsberg Maritime, who have been engaged in the project; these include top and middle management, project leaders, configurator developers, sales managers, and sales staff. In addition to the interviews, a one-day workshop including 22 employees from Kongsberg was held to discuss the primary findings from the study. The case presentation is divided into four parts. The first part is a brief introduction to the company and its newly introduced product segment, called C-line. C-line is built around the company's internally developed Configurator and is the focal point of this case study. From the introduction, attention is directed toward the three overarching findings in the study relating to *organizational issues*, *supply chain issues,* and the *"Fuzzy Zone."*

Background for C-line

The case company, Kongsberg Maritime AB, is part of a multinational group that is active in the maritime industry. The company primarily develops and sells propellers and other propulsion systems for ships. It is considered a market leader in the segments with high demands on performance. Production takes place within a global network of suppliers who participate in the customization process to varying degrees. Kongsberg offers three different product lines that are all customized, to different degrees. The company's high-end line, X-line, for extreme customer demands, such as naval applications, often demands the development of new technological solutions and can be classified as applied research projects. The performance line, P-line, is an OOD that enables customers to have fully customized and optimized solutions by utilizing existing technology. The third line, C-line, is the configured line in which an in-house developed configurator is used to customize the offering. Figure 6.1 illustrates the differences in the quotation process between an OOD and a Configurator. In the ODD example for X- or P-line (at the top of Fig. 6.1), the RFQ processes includes several design iterations stages (depending on how advanced the development needs to be) before a final quotation is delivered. The configurator, by way of comparison, eliminates all kinds of iterations, since the

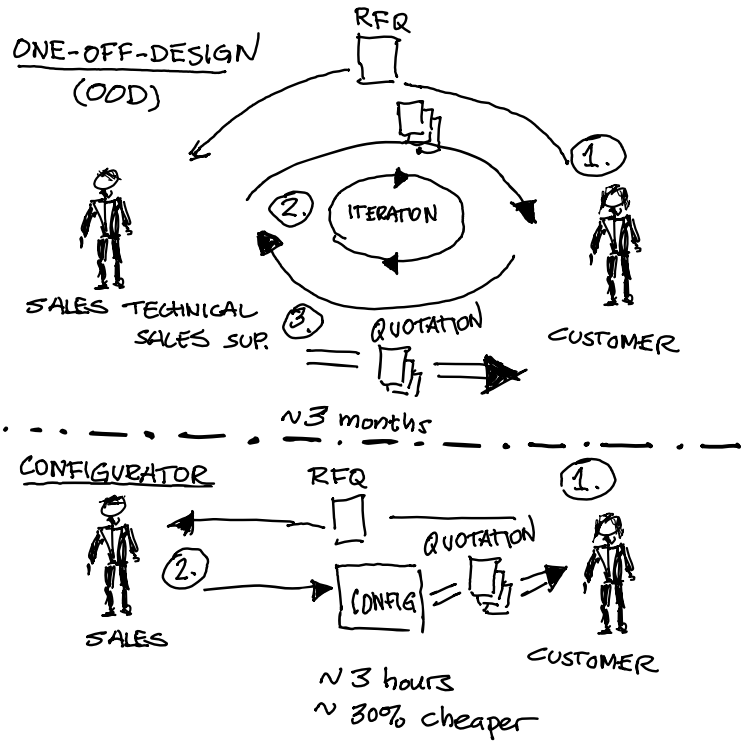

Fig. 6.1 OOD vs configurator

input data from a customer is directly transformed into the final output (technical drawings, prices, etc.). Hence, lead time and cost are significantly reduced when utilizing the configurator compared to the traditional OOD offerings.

C-line is the newest line, or product segment, and primarily targets new markets that are more price sensitive than the traditional X- and P-line customers. C-line products are configured within predefined technical limitations, using the configurator to fit the specific customer vessel. The configurator holds a number of possible options, which provides a clear, simple, and short decision process. Much of the customization concerns optimizing the technical specification toward different parameters, decided by the cruising speed and noise limit. For this, a number of computer-based algorithms have been developed during the last four decades based on experience and developments in previous projects. These algorithms constitute the heart of the configurator. The user interface of the configurator is also quite simple—a salesperson can produce a quotation after just a few hours of training, without requiring a lot of technical competence. This is weeks, or even months, quicker than the RFQ process for an OOD (P-line). However, C-line designs are not fully optimized, and the customer cannot influence, for example, the choice of supplier for the components used in the design, as these are more or less standardized. The benefit of the configurator, apart from the substantially reduced lead time, is a price that is approximately 30 percent lower than for P-line. Below we describe experiences from adopting the configurator on an organizational level.

Organizational Issues from Introducing the Configurator

A new way of working—a new mindset. The case study made it evident that the quotation process is completely different for C-line than for the P-line. For the latter, the process that has been in use for decades has involved the salesperson working together with a technical engineer specialist to thoroughly understand the customers' needs and requests. As mentioned above, the process is quite time-consuming, often stretching up to three months before the final quotation can be sent to the customer. The traditional quotation process can be described as an interactive problem-solving (the customer's problem) process, where sales and technical personnel collaborate with the customer to understand their requirements. This often includes travel to the customer's site. The internal company culture has been highly customer-oriented, trying to meet the customer's requests without arguing. As one manager reflected: *"We have had a tendency to never say no to the customer. But sometimes the customer doesn't know what's right for them. We ought to guide them towards a more cost-effective solution."*

With C-line, the communication is managed by the salesperson alone, with technical assistance from the configurator. Essentially, much of the technical specialist's expert knowledge has been embedded into the configurator and becomes the salesperson's "new technical co-worker." The configurator "asks" for a number of design parameters to be entered. The task of the salesperson is to obtain the correct figures from the customer and then enter these into the configurator and press the "compute

button" to complete the quotation. There is little room for manual adjustments in the design when using the configurator, which may be somewhat frustrating for a salesperson who is used to adapting to special requests from customers. It can also be difficult to determine whether the customer should be offered C-line or P-line; we will return to this issue later. In practice, the C-line configurator requires a one-day training session for the salesperson. However, the main difficulty is less the learning than it is the unlearning of old habits. A major hurdle in this regard is resistance toward new routines and processes. This is a generic problem and not linked to the configurator per se. In the case of the configurator, the key seems to be training and motivation of the sales personnel. A motivation for the sales personnel is that C-line sales are quick and effortless and mainly focus on new segments. However, a question that emerged in the study was whether or not the current salespersons should handle both C-line and P-line products since they then need to handle two different mindsets simultaneously.

Handling disparate mindsets or logics is a classical dilemma known as ambidexterity (O'Reilly III & Tushman, 2013). For example, in order for a company to be prosperous over time, it must be able to handle both short-term and long-term issues. Short-term issues include capitalizing and keeping financial figures healthy, while the long-term issues are focusing on exploring for the future, often by developing or innovating new products, services, or business models. A firm can manage ambidexterity using the *contextual approach* (also known as integration), meaning that its employees should handle both mindsets, or using a *structural approach* (also known as separation), implying that the firm has dedicated personnel for each of the mindsets. The management literature has no conclusive answer to what is best and must be explored for each specific situation. The ambidexterity dilemma—namely, whether it should be the same salespersons handling C-line and P-line sales—was acknowledged in the case. Contradictory opinions exist within Kongsberg, with some arguing that C-line and P-line should be completely separated, while others argue for an integrated approach in which employees should be able to handle both lines simultaneously.

Those who argue that there should not be a dedicated C-line team feel it is more cost-efficient to have the same salespersons handling both lines. One manager argued that *"…one of the key things for a company is to maximize the revenue for each project. And I think that is best done by spreading it out and the same people are able to collect from different things and putting larger packages together."* However, since C-line requires a completely different way of working compared to how things have been handled in the past, others believe it might be more efficient to have a dedicated team working with C-line, both for sales support and in contract management and operations. One participant reflected that, *"It might be easier to have separate salespeople for C-line,"* based on the idea that C-line basically changed the firm's traditional mindset. Another manager argued, *"Since it is a different mindset compared to current process, it could possibly be more efficient to have a team dedicated to C-line operations."*

Another organizational issue that emerged in the study was the fear of what the long-term outcomes could be, from an employee's perspective. Digitalization and

automatization bring different views among the employees. As one participant expressed it: *"A lot of people are skeptical to change."* Others had different views, as one participant reflected, *"… I like that thing are fluid and that things are changing, but a lot of people will automatically go into defense mode whenever they hear something changing. They don't care if it's a good change or a bad one."* In essence, the participants were discussing what is known in the literature as "resistance to change." It is clear that different views exist at Kongsberg when it comes to what the new way of working might bring in the long run.

However, top management did not see the potential changes as a dystopia or even as a likely outcome. Instead, they thought the configurator would release the technical specialists from the standardized designs (C-line) and let them focus on the more complex—and often higher-margin—business deals that cannot be handled by the configurator. As one of the managers explained: *"The content of work will change, and the idea is to get more time for the more complex projects."* The configurator used in C-line will provide the opportunity for technical specialists to deepen their knowledge, which can also be used to further develop the configurator. The configurator enables the release of resources from "trivial" projects to instead be allocated for complex projects. As one manager explained: *"Instead of doing a lot of quantitative work, the focus can be on qualitative work."* The work process for configured products is totally different from the OOD sales/design process and C-line will offer the opportunity to focus brain power on X-line- and P-line-related projects.

In essence, the key findings relating to organizational issues are that (1) the new way of working (2) requires a shift in mindset. Furthermore, the organization needs to manage the discussions about whether to (3) divide the organization into two parts or whether employees can manage both ways of working simultaneously. Finally, (4) the organization must also manage the fear of change that could turn into resistance to change. With the organizational issues in mind, we now turn toward the supply-chain-related issues.

Supply-Chain-Related Issues

During the workshop with Kongsberg managers, the scope of supply chain management received attention. The discussions were divided into two categories, one relating to developing and updating the configurator and the other toward the development of supply chain activities, namely, capacity, trust, and risk. The discussions regarding the development and ability to keep the system up-to-date specifically emphasized the accuracy of the data used in the configurator, which will affect the generation of pricelists. The pricelists originate from the drawings generated in the configurator, together with a bill of material that is needed to produce the requested propeller by the supplier network (who must therefore be part of the quotation process). In cases where all production is made in-house, some of these issues are minor, but since material and energy prices are quite volatile, the need to update production costs on a regular basis is important. Kongsberg is aware that the updating procedures need to be clearly established. Striving for quick quotation response

times to customers, Kongsberg sales representatives must rely on the prices and time of delivery that the configurator generates.

It was also made explicit by the participants in the workshop that the suppliers quotations come with correct delivery times. The configurator's accuracy on this matter was considered critical because it will generate quotes and orders based on the selected configuration. Participants felt that inconstancies here would undermine the quality of the outcome. This raised questions about how much time and resources Kongsberg should spend on data maintenance, to ensure the configurator is up-to-date. In this case, the data maintenance focus is on delivery times and pricelists. If the amount of time used for maintenance is high for the organization, the margins from using a configurator will shrink. During the workshop it became clear that the configurator is seen as a core competency of Kongsberg, which might not be shared with outside companies. Thus, the discussions made it evident that Kongsberg itself should be in charge of making sure the system is up-to-date.

The possibilities of granting access to the supplier network, so that they could directly update pricelists and delivery times, were also discussed. However, giving access to the system requires outsiders to be trained to use the system, which also takes resources into account. In the workshop, ideas were raised regarding whether a supplier could be helpful and be a part of the development of the configurator, defining the best scope of deliveries and their advantages and limitations. In a streamlined process, delivery times from suppliers have low variation, but if the market demand is high, the supply chain might reach capacity limits and might prolong lead times. Hence, data must be updated in the configurator as well. In cases like these, the discussions connected to trust, and risk emerged.

It was clear in the workshop that Kongsberg needs transparency in its communication with suppliers. The amount of knowledge that the supply network should have was also discussed in relation to both trust and risk. There were concerns within the group that granting too much access to the configurator to suppliers (via the ability to let them help keeping the system up-to-date) could potentially lead to them taking ideas for sales themselves. While the discussions did not lead to any definitive conclusions, the workshop did make it clear that it is important to manage questions regarding trust and risk during the implementation and adoption process of the C-line configurator. From the organizational and supply-chain-related issues identified in the case study, the final issue relates to the so-called Fuzzy Zone, that is, the ability to set boundaries for when a C-line project ought to become a P-line project.

The "Fuzzy Zone"

It became evident from the case that there might be a "fuzzy zone" between a full OOD and a configured design, that is, between P-line and C-line. A customer might put in an RFQ for a configured design and receive a quotation consisting of a priced design proposal. The problem occurs if the customer discovers that it then wants to make a "small change" in the design that goes beyond the solution space of the

configurator; then, by definition, it is immediately no longer a configured product. The small change could be that the customer wants to have a gasket from another brand or a color other than the one specified for the configurator. This can create the awkward situation of the price suddenly being 40 percent higher and the delivery time much longer. This situation might also put the sales personnel in a stressful situation where they are bound by the restrictions while the customer wants "only a little" special change in the design. This situation is exacerbated by the fact that the company has historically been renowned for being extremely flexible toward customer requirements.

The problem has been acknowledged within the company and it is a delicate balancing act. Two different strategies to handle the problem could be discerned. The first is to be very strict toward the customers and explain that C-line products are more or less standardized, which is why they come with a lower price and shorter delivery time. As one of the managers explained, *"The sales force needs to learn and adapt to use this tool."* Otherwise, there is a major risk that C-line is no longer a configured product, but rather a shortcut to get a cheaper P-line product. Or, as another manager expressed it, "*We will not succeed with C-line if we don't stand up for it* [do not accept any extra adaptations]. *Otherwise, it will be as the old customized projects* [P-line], *which will imply more engineering hours, […] that would make it more expensive."*

The other strategy to handle the fuzzy zone would be to be more pragmatic and offer adaptation services; some of the interviewees referred to these as "C-plus services." After the customer has signed a C-line contract, that would enable the salesperson to offer some changes at a given price. One of the top managers reflected upon this: *"… it is also the case that the customer at the time for order, to manage building schedule, has seldom finished designing all parts of the ship and then there might occur some needs that don't make C-line optimal anymore. So, it is definitely a possibility, with such C+ services. But then the customer […] has to be prepared to pay for it."*

Failure to enable some flexibility to adjust, even outside the boundaries of C-line, could result in the whole deal being lost. Therefore, the most important thing is to be able to charge extra for these changes.

There was no consensus regarding this, however. Some of the participants still think that it would be risky as it would be difficult to estimate the actual cost for these minor adaptations. There was an overall belief that the market will move more toward standardized (configured) products in the future. *"I think the world realizes that you can't afford all these tailor-made products in different industries, so I think that could benefit us."*

In summarizing the findings from the case study, it is clear that Kongsberg needs to address several challenges. Internally, there are challenges relating to the need for a new mindset and discussion about whether to divide the organization into two parts to best manage the new way of working. The company also needs to address whether to grant access to the configurator to its suppliers as a way of ensuring the system is up-to-date. This connects to risk management and trust between Kongsberg

and its suppliers. Finally, Kongsberg must decide how it should act in situations where customers suddenly ask for more than C-line and the configurator can offer.

Conclusions

This chapter aims to explore the challenges with adopting configurators in an organization. We have focused on the use of configurators for the quotation process in complex B2B contexts. We can conclude that working with configured products implies a totally different yet simplified quotation process, compared with the current way of working. It is well known that configurators offer two main potential advantages: *reduced lead time* from RFQ to sending a quotation back to customers and *lower production cost,* as the quotation process will be partly automized, demanding fewer or no technical specialists to execute. What has been less explored in previous research are the challenges involved in introducing configurators. Based on our literature review and the in-depth case study, this chapter contributes with insights to consider when adopting configurator technology. An issue that has not been elaborated on in the case study was the development of the actual configurator. In the Kongsberg case, it was developed in-house over a long period, based on decades of experience of designing propeller systems. The company has accumulated engineering knowledge and embedded this into the "brain" of the configurator. Each configurator needs to be specially adapted to meet the company's needs. The efforts of technically developing the configurator are not further elaborated here; instead, we focus on the organizational and business aspects.

Organizational Change: Adopting a New Mindset

Even if a configurator can be considered a digital platform, the case has shown that introducing a configurator is much more than a technical project. To make real use of the configurator, it is important to acknowledge that it requires a totally different mindset compared to working with one-off designs. If, as in the Kongsberg case, the company wants to work in parallel with both OOD and configured product lines, this will demand an ambidextrous organization. In other words, the company must handle two different business logics simultaneously. This can be accomplished by either dividing the different product lines into separate business units or allowing the employees to handle both logics. Both approaches have their pros and cons.

As seen both from the case and the literature, adopting configurators is an organizational change project. New mindsets require people to unlearn old habits and learn new, which usually causes resistance. Therefore, management must have a clear and communicated strategy for how the change is to be implemented.

Supplier Management

As the pricing process is automated and dependent on updated pricelists for the components included in the offered products, the relationship with reliable suppliers will be even more important when using a configurator. This might also be an opportunity to strengthen the bonds with suppliers. Configured products will likely have a higher turnover than OOD. This creates a risk that suppliers' capacity could become a bottleneck, jeopardizing the delivery time. Management must take measures to handle this. Currently, it is difficult to give good advice regarding this issue and this is an area for future research to examine.

The Fuzzy Zone Dilemma

In the case study, we identified a potential problem with offering configured products (C-line) in parallel with OOD products (P-line): some customers might end up "stuck in the middle" between C-line and P-line. This could occur if a customer receives a configurated quotation and then wants to make a change that is outside the boundaries of the configurator. This will, by definition, not be possible and the quotation will instead become a P-line offer with a significantly higher price. Managers must develop policies to handle this. We could discern two options in this regard. The first is to keep a strict policy, not allowing any deviation whatsoever from the configurated boundaries. The other option would be to offer the possibility to modify the configured product at an extra cost. In the case study, these potential adaptations were named C-plus services. The argument against this option was that the differences between C-line and P-line would be blurred. Experience and future research will enable more knowledge into how to handle this dilemma.

Final Advice: Roll-Out Strategy

Lastly, we want to offer a piece of advice when it comes to the roll-out strategy for configured products. As previously stated, a configurator must be adapted for each producing company, but also, in a sense, to each market. It could be advisable to follow a "crossing the chasm" strategy when rolling out configured products. The term "crossing the chasm" comes from Geoffrey Moore's experiences of diffusing hi-tech products in the Silicon Valley area (Moore, 1991). Moore advised firms to concentrate on a niche segment where they learn about their customers' requirements and be sure that they can meet them; in other words, firms need to ensure that their configurator is developed to handle the niche segment's requirements and offer the configured products primarily to the targeted segment. The likelihood of success will be much higher if the configurator is prepared for a target group. Once the first segment entry is successful, the next entry should be entered in the same manner.

Managers must keep in mind that configurators are here to stay. The rapid development of AI is also likely to influence what configurators can handle in the future. Maybe the next buzzword slogan will be "Configure to conquer!"

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Enabling a Circular Economy Through Green Service Strategies

7

Klas Hedvall and Lars Witell

Abstract

Services are key enablers in the transformation toward the circular economy because they provide the prerequisites for sustainable value co-creation. Services in the circular economy include "traditional" offerings such as maintenance and remanufacturing, but also newer types of services in the sharing economy. This chapter discusses three sustainable value co-creation activities in more detail: (1) extending product life, (2) dematerialization, and (3) replacing service systems. It also provides illustrations of services that support sustainable value co-creation and, ultimately, improved environmental sustainability. The chapter concludes by highlighting key challenges for firms and customers involved in sustainable value co-creation activities.

Key Takeaways

- Extending product life, dematerialization, and replacing service systems can be used to engage in sustainable value co-creation toward a circular economy.
- Firms and their customers need to perform and coordinate their individual green service strategies and sustainable practices to enable sustainable value co-creation.
- Rebound effects and competition between green services in the service ecosystem can limit the positive effects on the sustainability of sustainable value co-creation.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_7

Introduction

Even though there is only one planet Earth, "*by 2050, the world will be consuming as if there were three*," and the "*[g]lobal consumption of materials such as biomass, fossil fuels, metals and minerals is expected to double in the next forty years, while annual waste generation is projected to increase by 70% by 2050*" (European Commission a, n.d.). It is only recently that environmental aspects of production and consumption have gained the attention required to spark more substantial changes to the operations, products, and services of firms. Since the effects of climate change have become a central topic on the international, national, and local agendas, awareness regarding the need to change our way of living and managing our businesses has increased. Consequently, the market for pre-owned products such as used furniture, refurbished mobile phones, and secondhand clothes is growing (e.g., Forbes, 2022). However, the transformation has been hampered because many customers have shown low willingness to pay the "green premium" for sustainable products and sustainable service provision (Guyader et al., 2017).

In addition to the general debate in media and among citizens, owners, shareholders, and customers have put pressure on firms to become more sustainable. The development of regional, national, and international regulations and standards has driven the development of more sustainable technologies, production, use, and recycling of products. Among the initiatives strongly influencing the transformation to circular economies in Europe are the "EU strategy for sustainable and circular textiles" (European Commission b, n.d.), the "New EU regulatory framework for batteries" (European Parliament, n.d.), and the overarching "Circular economy action plan" of the European Commission (a, n.d.). While challenges and opportunities regarding reduction of waste and the use and reuse of materials often receive the lion's share of attention, the circular economy is not only about circular flows of materials. Improving circularity also involves measures to enable more efficient use of products and extend their lifespan. Among such measures, Potting et al. (2017) point to services and servitized business models as key enablers of a transformation from linearity to circularity.

Managers in firms and organizations involved in the transformation to circular economies face multiple and complex challenges. First, managers need to understand what to do in order to "become more circular." Among other things, this involves understanding what circular economies are about, the aim of such transformation, and where the organization is currently positioned in relation to what needs to be achieved. Moreover, managers need to identify which circular strategies (Potting et al., 2017) can be used in their business, how to implement them, and in what order. Managers must also clarify how to leverage existing offerings and simultaneously manage multiple business models following different logics. The aims of this chapter are to address some of the challenges and opportunities that managers face and shed light on the role of sustainable value co-creation activities in the transformation toward circularity. To address these aims, we focus on services as enablers of the circular economy and their role in improving environmental

sustainability. By doing so, we hope to guide managers involved in the transformation toward a circular economy.

We start by briefly discussing what the circular economy is and what drives the transformation from linearity to circularity. We then highlight how services and servitization can support improved sustainability and enable circular economies, discussing three sustainable value co-creation activities in more detail: (1) extending product life, (2) dematerialization, and (3) replacing service systems. Next, we share a few illustrations of how organizations servitize their business model to reduce their environmental footprint. Finally, we discuss some of the challenges involved in servitization for the circular economy and suggest a set of key guidelines for managers.

What Is the Circular Economy?

The circular economy is commonly seen as a key enabler for improving sustainability and reducing the environmental footprint of society. According to the Ellen Macarthur Foundation (n.d.), *"[t]he circular economy is a systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution."* As opposed to the so-called linear economy—which reflects a logic based on "take-make-use-dispose"—the circular economy leans on strategies with the aim of limiting the outtake of new resources, enabling efficient and sustainable utilization of products produced, and reusing materials from products at the end of their life cycle (Potting et al., 2017).

The transformation from a linear economy (take-make-use-dispose) to a circular economy (reduce-reuse-recycle) involves challenges for governments, firms, and customers. To reduce the outtake of virgin material, new technologies for production and recycling are often required. Moreover, enabling efficient and sustainable use of products could require alternative designs of the products and the introduction of new service-based business models. Hence, design principles such as "design for maintenance" and "design for remanufacturing" are also at the core when aiming to extend the life span of products (e.g., Produktion 2030, n.d.).

Ulaga and Kowalkowski (2022) suggest that the aims and practices of servitization and the circular economy are converging rapidly. Taken together, services establish a core element of the circular economy. Therefore, to secure a steady and timely transformation from a linear economy, organizations need to tune their servitization strategies and roadmaps to reflect the opportunities, constraints, and characteristics of the circular economy. As discussed above, however, the changes required involve challenges for the management of firms. In the next section, with the aim of guiding managers interested in developing and introducing services for the circular economy, we will introduce a service-based framework of the circular economy and discuss some of the services that will enable sustainable value co-creation and a more sustainable society.

What Do We Know About Green Service Strategies?

When addressing sustainability, many firms follow the paradigm that "green service" is about reducing the negative environmental impact of existing services, while more proactive firms follow the paradigm that green service can expand biological diversity and other natural resources (Guyader et al., 2019). In service research, Grove et al. (1996) organized "green efforts" toward sustainability through the "three Rs" hierarchy of waste management: reducing, reusing, and recycling. The three Rs provided guidance on how to protect the environment from the negative impacts of service provision. Additional Rs have been introduced in service research, such as renewing and reminding (Rosenbaum & Wong, 2015) and recirculating, redistributing, and reframing (Guyader et al., 2019). However, service research has had a narrow focus on service provision, which is why it has not covered all types of green service strategies needed in a circular economy.

Outside service research, a wider range of strategies have been addressed. In a policy report for the Dutch Ministry of Infrastructure and the Environment, Potting et al. (2017) provide an extensive overview of circular strategies that support a transformation toward circular economies (see Table 7.1). According to Potting et al. (2017), the circular strategies with a lower R have more environmental benefits; for example, Refuse (R0) is preferable to Recover (R9). In the following, we use the term *green service strategies* to describe the alternative conceptualizations of Rs from both service research and sustainability research.

Sustainable Value Co-creation in the Circular Economy

We suggest that green service strategies of firms and their customers enable sustainable value co-creation in the service ecosystem. Although such strategies enable improved sustainability as an outcome of the value co-creation, firms and their customers must interact and align their respective green service strategies and practices. The way in which a customer sees the world affects how the customer interacts through accepting or adjusting norms of behavior to participate in value co-creation (McColl-Kennedy et al., 2017). These value co-creation practices affect the way an individual does things, that is, their individual activities (Kjellberg & Helgesson, 2007). In other words, sustainable value co-creation is based on sustainable practices linked by interactions. If the outcome of these practices and interactions results

Table 7.1 Circular strategies

	Smarter use of products	Extend life of products	Use of materials
Circular strategies	R0 Refuse R1 Rethink R2 Reduce	R3 Reuse R4 Repair R5 Refurbish R6 Remanufacture R7 Repurpose	R8 Recycle R9 Recover

in improving sustainability, there is a need for both the service provider and customer to link and align their individual sustainable practices.

Based on Potting et al. (2017), we suggest that several of the circular strategies identified can be performed by both the service provider and the customers. However, certain Rs, such as rethink, repair, remanufacturing, and repurpose, are more commonly performed by manufacturers and service providers. Thus, these Rs represent sustainable practices of service providers. Other Rs, such as recycling, reusing, and refusing, are more commonly performed by customers and are therefore examples of sustainable customer practices. For customers, participation in sustainable value co-creation could be optional but necessary to make sustainable value co-creation happen in practice. Sustainable value co-creation does not happen if one of the actors does not participate in the activities and interaction is needed. For example, if customers do not recycle products in the market, there are no products for the firm to remanufacture and no material accessible for manufacturing of new products. If firms and customers both perform their individual practices and engage in green service strategies, there can be sustainable value co-creation.

Figure 7.1 illustrates a conceptual model for sustainable value co-creation in the circular economy. The model suggests that service providers and customers perform individual sustainable practices, and when these practices are performed and interlinked, sustainable value co-creation can take place through interactions. In the conceptual model, we identify three green service strategies: (1) extending product life, (2) dematerialization, and (3) replacing service systems. The list is not exhaustive, as there are many ways in which the individual practices of service providers and customers can be combined to enable sustainable value co-creation. There are also ways to combine the different practices that do not result in sustainable value co-creation, even if they logically should. Such instances are often called rebound effects of sustainable value co-creation. A rebound effect can be described as a

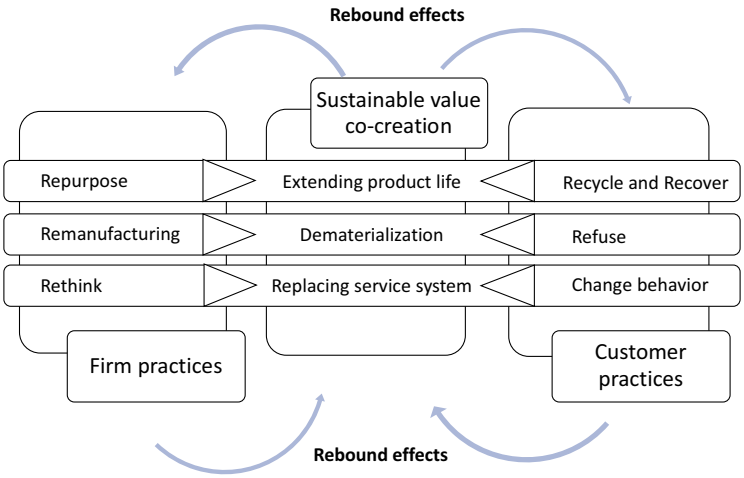

Fig. 7.1 A framework for sustainable value co-creation in a circular economy

situation where an intended positive sustainability effect turns into a negative sustainability effect (Binswanger, 2001). There are different types of rebound effects, where direct and indirect rebound effects are most common. For example, the introduction of cheaper energy through using windmills and solar energy might provide more efficient energy to society, but cheaper energy might also provide increased use of energy on the individual level. We expect that such rebound effects will occur and, under certain conditions, also limit the positive potential of sustainable value co-creation.

Illustrations of Sustainable Value Co-creation Through Services

In this section, we provide illustrations of sustainable value co-creation and discuss existing green service strategies from industries using services and servitized business models for enabling a circular economy. We have chosen illustrations of sustainable value co-creation from three different industries: the textile industry, the automotive industry, and the restaurant industry. The services we discuss represent different green service strategies for firms transforming to a circular economy. Drawing on the discussion above, we relate each service to the strategies (R0 to 9) of Potting et al. (2017) and the framework for sustainable value co-creation in a circular economy that was introduced in the preceding section.

Extending the Lifespan of Clothes and Garments

According to statistics from the European Commission, the textile industry is one of the three worst industries in terms of the pressure it puts on water and land use, and one of the five worst in terms of greenhouse gas emissions. Moreover, textiles production doubled between the year 2000 and 2015 while only about 1 percent of material used to produce clothing is recycled into new clothing (European Commission, 2022).

Addressing the problems arising from the production and consumption of textiles and clothes requires a wide array of measures. While the producers focus on opportunities such as recycling and reuse of fibers (e.g., Renewcell, n.d.), there are also gains to be made with respect to the clothing that has already been produced and is in use. If we can extend the life span of clothes, consumers may refuse (R0) to buy new products and instead use the ones that are already available. If clothing can also be reused by other consumers (Rethink (R1) and Reuse (R3)), the need for new production of textiles can be reduced. Examples of service-based offerings enabling reuse and sharing of clothes include rental firms offering clothes for events and festivities, retailers offering reused collections (e.g., Worn Wear Patagonia, n.d.), and firms offering platforms allowing people to sell or donate clothing to others (such as H&M RE:WEAR, n.d.). To keep the clothing functional, even during prolonged use, services for repairs (R4) and refurbishing (R5) establish key green service strategies. Another opportunity to reduce the environmental footprint of the

textile industry is by using material from discarded products in new ways through repurposing (R7). An example of such an initiative is the Swedish company "Reused Remade," n.d., which turns discarded hotel bed linen into products such as bags and makeup pads.

Figure 7.1 uses the sustainable value co-creation practice extending product life to show that companies wishing to succeed with such a practice must engage in activities such as recycling and recovering, while the service provider needs to repurpose the clothing. If any of those activities do not happen, the value co-creation practice will not be sustainable.

Dematerialization Through Vehicle-as-a-Service

For the automotive industry, the transformation toward improved sustainability has long revolved around measures such as reducing the emission caused by combustion engines, reducing the materials and energy required for manufacturing, and reduction of particles originating from the use of vehicles. In recent years, however, vehicle manufacturers have also gained increasing awareness of the opportunities that servitized offerings such as "vehicle-as-a-service" (VaaS) may offer in terms of improving environmental sustainability.

The idea of offering access to vehicles and mobility without the customer necessarily purchasing the vehicles is not new. Vehicle manufacturers, as well as rental companies, have long offered their customers access to vehicles through rental agreements and leasing. In addition to the past arguments for VaaS, servitized offerings for transport and mobility have now also become a way to counter the cost increase and technological uncertainty related to vehicles with electrical propulsion systems. Instead of buying vehicles, some customers prefer to pay for the convenience and peace of mind that are characteristic of offerings involving access to vehicles or mobility. Lately, the sustainability dimension of such offerings has also gained traction. By offering VaaS, manufacturers may reduce the number of vehicles produced, extend life span, and enable a more efficient use of the existing fleet. The basic idea is that the VaaS customers only use the vehicles when needed, and when the vehicles become redundant, other customers of the VaaS offering can use them.

Hence, through servitized offerings, vehicle manufacturers address several green service strategies. First, by opting for VaaS instead of purchasing a vehicle, the customer makes the choice to refuse a purchase (R0). Second, through the servitized offering, the manufacturer addresses the ideas of the Rethink (R1) circular strategy, for which sharing of products is a key element. Moreover, as several customers may use the same vehicle of a fleet and fewer new vehicles have to be produced, the offering addresses the ideas of Reduce (R2). Finally, if the manufacturer designs the product for a long life cycle and implements appropriate maintenance strategies (through green service strategies Repair (R4), Refurbish (R5), and Remanufacture (R6)), the vehicle's life cycle can be extended, thus fulfilling the ideas of Reuse (R4).

In Fig. 7.1, the sustainable value co-creation practice of dematerialization is used as an illustration of how to succeed with such a practice. Consumers need to engage in activities such as refusing (R0) to buy vehicles, while the service provider needs to use remanufacturing (R6) to extend product life and prolong the life span of vehicles. If this is done, a larger fleet will be used as the VaaS offering and more consumers will be willing to use it, since there always will be a vehicle available at the right price.

Replacing Service Systems Through Reusable Cups for Takeaway Beverages

Consumers are used to buying food using drive-in or takeaway facilities and drinking their coffee on the road. However, this lifestyle involves extensive use of single-use items for food and beverages. In Sweden alone, between 500 million and 1 billion disposable coffee cups are used yearly (WRAP, 2022). The EU and its Member States are developing and implementing new legislation that is intended to change this unsustainable behavior. In Sweden, the goal is that the use of single-use items should be reduced by 50 percent by 2026. This change will mainly be driven by laws prohibiting products with more than a certain content of plastic and regulations demanding restaurants and cafes to offer reusable packaging in a rotation system as an alternative for customers buying for takeaway (WRAP, 2022).

Hence, in accordance with upcoming regulations, cafes, restaurants, and other actors offering takeaway services must implement systems for reusable packaging, cups, and glasses. While firms may develop their own solutions to meet these demands, there are also a growing number of service providers for cafes and restaurants that want to outsource the provisioning of reusable products and circular systems. For example, the US company r.cup provides its customers with solutions encompassing reusable cups for beverages, logistics for shipment to and from venues, washing of used cups, and environmental reporting. Another example regards the German company reCup offering the RECUP solution for drinks and the REBOWL solution for takeaway food. The system, which is currently used by the company's partners at more than 20,000 locations in Germany, involves a logic where the customer pays a deposit for the bowl or cup in conjunction with purchasing the takeaway. When the customer returns the reusable packaging to any of the connected partners, he or she will receive their deposit back and the establishment will wash the used packaging in preparation for the next loop.

Similar to VaaS, the system of reusable cups, glasses, and food containers is an example of a servitized offering addressing the green service strategy for reuse (Reuse (R4)). Moreover, because the reusable products for beverages and food are part of rotation systems and are therefore used again and again, the number of products required for food and beverages can be reduced (R3). As customers, as well as the firms selling food and beverages, refrain from using the existing single-use items, we also see an example of Refuse (R0) and Rethink (R1).

Figure 7.1 shows the "replace service systems" sustainable value co-creation practice. Consumers need to change their behavior and abandon an existing and convenient service system, while the service provider needs to rethink its existing service system and move to a new service system based on reuse.

As we have highlighted in this section, there are numerous ways for firms to contribute to a more sustainable society through servitized offerings. However, the transformation to circular economies and the development and implementation of services enabling improved sustainability does not come without challenges. As the examples above make clear, the changes required could become a tall order for both suppliers and their customers. In the next section, we will highlight and discuss some of the challenges faced by firms striving to become more sustainable.

Challenges Involved in the Transformation to Circular Economies

As the illustrations of sustainable value co-creation have shown, the transformation from a linear to a circular economy involves certain challenges. For firms, the transition may involve adopting new technologies, materials, and manufacturing processes. The change could also require new collaborations while abandoning long-lasting business partners, attracting new customers, and developing new business models. Below, we discuss some of the many challenges that managers will have to deal with when striving for improved sustainability.

Rebound Effects

Services that enable a circular economy have clear benefits. Through such offerings, firms may help to reduce the outtake of new material (such as critical earth metals), reduce waste (such as single-use cups for takeaway), and reduce energy consumption in production (when fewer products are produced). However, it is also important to identify and avoid possible unexpected or negative effects from the introduction of services enabling the circular economy. In the automotive industry, for instance, there are examples where servitized offerings such as VaaS may lead to an increased use of vehicles. Instead of existing vehicle owners selling their vehicles and turning to mobility services, many of them keep their vehicles while mobility services gain traction among new customers that previously did not choose—or could not afford to choose—to use vehicles for their transportation. Hence, instead of reducing the need for new vehicles, manufacturers could face a situation where the demand increases as a result of the availability of mobility services.

Implications for Business Models

Implementing new or adapted services enabling a transformation to circular economies can provide firms with opportunities and benefits. We just have to look at the many entrepreneurs that have established new products and services filling demands that previously have not been addressed. At the same time, however, there are clear challenges with respect to business models and revenue streams, and one example regards the automotive manufacturers introducing offers such as VaaS. Until now, the aftermarket of automotive manufacturers has been a strong and reliable source of revenue. Selling manhours for service and repair together with spare parts and accessories generates substantial profits. However, when customers buy servitized offerings like VaaS, they do not pay for maintenance or spare parts. Instead, the manufacturer, which remains the owner of the vehicle, will have to take on those costs. Hence, when laying out the strategies for a transition to a circular economy, considerable energy must be devoted to the analysis regarding business models and revenue streams.

Transition Toward a Circular Service Ecosystem

A firm is always embedded in a service ecosystem involving other actors such as suppliers, customers, partners, and competitors. Most often, the interconnected firms also display interdependencies, both with respect to operations, offerings, and business models (Hedvall et al., 2019). Hence, when firms develop and implement green services that allow for improved environmental sustainability, they must also consider what this means from an "ecosystem perspective." Will the future customers of new services be the same as today? Does the firm need to change suppliers, or even support the establishment of new firms? How will the change in business models affect the business models of suppliers, partners, and customers? What role will consumers play in the circular service ecosystem?

The changes resulting from the implementation of an offering involving reusable takeaway cups can serve as an example. When a firm offering takeaway decides to offer its customers reusable cups, there will also be changes in the wider service ecosystem. The firm, let us say an event organizer, will have to change the way it operates, as well as its business relationships with suppliers and partners. When the rotation system for reusable packaging is introduced, the event organizer will stop purchasing single-use items, hence discontinuing established supply chains. At the same time, the amount of waste will (hopefully) be reduced, thus leading to revised contracts with waste management operators. Moreover, to keep track of cups in the system, the event organizer may need to collaborate with new suppliers in order to invest in new technology (such as QR codes or RFID) for cashiers.

Manage Both Linear and Circular Economies Simultaneously

Another challenge (and opportunity) relates to the possibility of firms finding themselves in a position where they need to simultaneously maintain both linear and circular supply chains and business models. Two examples of such cases regard the firms Patagonia and H&M, which simultaneously offer new clothes and previously used clothes. By doing this, the firms may have to develop separate supply chains: one for new products and one for pre-owned. Moreover, the firms could have to maintain different sales channels to reach different customer groups. Also, with respect to commercial communication and pricing, the firms must ensure a match between the two different types of offerings: for example, how to market and price pre-owned clothes in comparison to new products, and whether the two offerings should be available in the same shops or sold in separated market channels.

Until the new circular business model is profitable, the existing linear business model might finance the investments needed for the provisioning of new circular offerings. There are also challenges with respect to timing: when should the firm stop providing the services based on a linear business model and move completely into a circular business model? If the firm moves too quickly, the new circular business model might not provide sufficient revenues for the firm to survive. If it takes too long, competitors could have taken a strong market position that makes it harder to enter the market.

Competition Between Circular Strategies and Green Services

Another aspect regards the possible competition among green services implemented in a service ecosystem for the transition to a circular economy. In the best of worlds, firms collaborate to develop and implement the changes that result in a substantial improvement of sustainability. However, it may happen that the introduction of a new service results in a negative effect for another firm, an effect that even could lead to an overall deterioration of the environmental footprint for the entire service ecosystem. The example of VaaS discussed above provides a clear example of how the introduction of a sustainable service could result in a total negative effect on sustainability for the service ecosystem.

Another example regards how the demand for batteries required in an application enabling cleaner energy production competes with the demand for recycling of materials within the same batteries. As more and more firms and citizens turn to solar energy as a source of electricity, the demand for batteries to use as an element in energy storage of such systems increases. Therefore, used batteries coming from electrical vehicles are bought by firms offering energy storage equipment. At the same time, however, the materials of the same batteries are required as a source of new production, resulting in conflicting interests.

Conclusions

The aim of this chapter is to provide guidance to firms and managers involved in a transition to circular economies through green services. Addressing this aim, the chapter introduces a framework for sustainable value co-creation in a circular economy. It is based on the concept of sustainable value co-creation and suggests that both firms and their customers need to perform and coordinate their individual sustainable activities to enable sustainable value co-creation. This chapter highlights the service ecosystem perspective necessary to enable a transformation to a circular economy and sheds light on the interactive and interdependent characteristics of sustainable value co-creation activities. Firms striving to reduce their environmental footprint may need to re-organize their supply chains, change suppliers, or attract new customers and develop new business models. The service-based framework for sustainable value co-creation aims to bridge the literature on value co-creation in service research (McColl-Kennedy et al., 2012) and sustainable activities in circular economy research (Potting et al., 2017). The framework enables us to pinpoint the need for both customers and providers to perform sustainable activities and note that, without one of the actors, no sustainable service ecosystems can be created.

This chapter also provides examples of how green services in three different industries successfully enable value co-creation resulting in improved sustainability. The green services that we have discussed lead to effects such as the extension of the life span of products, limiting the need for new products and a reduction of the outtake of virgin material, and a more efficient use of products already produced. However, this chapter also addresses key challenges and problems such as the rebound effect and illustrates how the benefits of sustainable value co-creation might not be realized due to inherent service ecosystem qualities. Such unwanted effects need to be considered when designing sustainable service ecosystems.

By drawing on the conceptual model we have introduced, the examples showing how firms introduce green services for improved sustainability, and the key challenges highlighted in the preceding section, we provide a list of key areas that should be addressed by firms striving for a transition from linear to circular economies:

- The concept of circular economies should be clarified in the specific context of each industry and firm. In other words, what does it mean for the company to become “more circular”?
- What are the key targets for the transformation at hand, which are the key performance indicators to track, and where is the organization currently positioned in relation to the targets?
- Which circular strategies apply for the specific industry and in what order should they be addressed and implemented?
- Which green services could support each specific circular strategy?
- Which enablers, such as technology, materials, and knowledge, are required for implementation of the green services?

- How will a transformation affect business relationships in the service ecosystem? Are changes foreseen with respect to customers, cooperation, and competition?
- What does a transformation toward a circular economy mean for business models and revenue streams—and how could parallel business models be managed by the firm?
- How could rebound effects and competition between circular strategies and green services be avoided?

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A Little Bit of That Human Touch: Avoid and Recover Service Failures

8

Jasenko Arsenovic, Bo Edvardsson, and Bård Tronvoll

Abstract

Managers who handle complaints often assume that customers report all service failure and passively wait for service personnel to resolve the problem solution (i.e., the service recovery). Here, based on decades of service recovery research, we seek to problematize the common conceptualization of a service failure. In particular, we argue for a broader understanding of what constitutes a service failure, encompassing failures that are not necessarily associated with the service provision, but can cause interruptions in the service experience. Using this new understanding of service failures, we outline advice for service managers to consider to avoid causing failures, and optimize their recovery processes by emphasizing the importance of the human service employees.

Key Takeaways

- The chapter presents a new definition of service failures. This perspective offers service managers a new way to think about negative incidents shaping the service experience.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_8

- Based on this reconceptualization of service failure, the chapter provides practical advice for managers on how to avoid and recover from service failures.
- The chapter emphasizes the importance of social and human elements in effectively addressing interruptions in a customer's ongoing service experience.

Introduction

For decades, extensive research and numerous review articles have documented how companies can optimize their complaint handling processes and procedures, particularly in addressing severe service failures (Orsingher et al., 2010). Despite this significant academic and practical interest, the number of dissatisfied customers continues to escalate. This trend is underlined by findings from the biannual customer rage study by Customer Care Measurement & Consulting (CCMC, 2020), which revealed that two-thirds of households experienced services that fell short of their expectations, indicating an upward trend in consumer issues.

In this chapter, we critically examine the commonly used definition of service failure within the service literature. By drawing from the growing body of customer-centric research on service experiences, we propose viewing service failures as either a temporary or permanent disruption in an ongoing service experience (Van Vaerenbergh et al., 2019). This perspective encourages service managers to recognize service failures as events that can occur at any point during the customer journey, not just as isolated incidents limited to the core service encounter. Failures not directly related to the actual provision of services might not always prompt customer complaints, yet they could significantly affect the overall customer experience and have far-reaching financial and reputable consequences for a wide range of service organizations.

Consequently, in this chapter, we argue that service failures are not exclusively tied to the provision of the service itself. Any service interaction can potentially interrupt and harm the overall service experience, requiring recovery efforts. The dominant perspective in service recovery literature suggests that companies should allocate time and resources to rectify an initial service failure (Arsenovic, 2021). However, a common assumption among scholars and practitioners is that service recovery begins only after a customer has expressed their dissatisfaction to the service organization (Edvardsson et al., 2011). This view becomes problematic with our broader conceptualization of service failure, which can occur at any point during the service experience. While similar ideas have been explored in prior studies (e.g., Bolton et al., 2014), there needs to be more comprehensive academic research on what this in practice might mean for business practitioners.

Indeed, managing the service experience remains a challenge for service companies (Becker & Jaakkola, 2020). Despite significant academic advancements in complaint handling (Van Vaerenbergh & Orsingher, 2016), many companies still struggle to effectively address customer complaints. This gap underscores the need for practical guidelines to help service organizations broaden their understanding of

service failures and enhance their complaint handling processes, ultimately improving the customer service experience.

To address these issues, this chapter begins by questioning the conventional definition of service failure and supports the idea that even minor incidents in any way connected to the service environment can significantly influence a customer's overall perception of the service organization. Next, we review recent literature on how companies can implement preemptive strategies to enhance customer service experiences. Finally, we offer five practical recommendations for service managers, emphasizing the significance of human interaction in preventing service failures and optimizing recovery processes.

Conceptual Background

Service Failures: Inevitable Interruptions of Customers' Service Experiences

No service organization is immune to failures. Service failures, long studied in the service and marketing literature (Kjeldgaard et al., 2021), are commonly understood as shortcomings in the core service offering (Voorhees et al., 2017). Scholars have emphasized the impact of these failures on vital marketing metrics, such as reputation and sales, and how companies can enhance their complaint handling procedures (Arsenovic et al., 2023; Knox & van Oest, 2014). However, most service failures do not result in formal complaints. Most customers, when encountering service issues, opt for passive responses, ranging from quietly leaving a store to ceasing purchases and badmouthing the service organization (Arsenovic et al., 2023). While this traditional view of service failure has its merits, from a customer's perspective, those experiencing service failures often remain silent (Voorhees, 2006). Rather than voicing their dissatisfaction, customers may turn to alternatives or simply stop patronizing the provider. The literature identifies three primary reasons customers refrain from complaining: maintaining the relationship with the service provider to avoid negative tension (Umashankar et al., 2017), perceiving the complaint process as time-consuming and burdensome (Voorhees, 2006), and not viewing failures as severe enough to warrant complaint handling (Singh & Wilkes, 1996). This silence deprives service organizations of vital feedback for learning and improving their services (Tax & Brown, 1998).

Service experiences, formed through various touchpoints, are subject to customer evaluation and are less controllable for service providers (Becker & Jaakkola, 2020). Interruptions in any of these touchpoints, whether direct or indirect, can impair the service experience. However, such failures often go unvoiced, leaving customers with unresolved issues. We introduce a broader definition of service failure as to be any service performance, not limited to the core offering, that falls below customer expectations (Arsenovic, 2021).

In supporting this broadened perspective, studies have shown that even minor, seemingly unrelated failures can significantly impact customer behavior. For

example, studies have found that violations of social norms, such as a staff member standing too close, can lead to customer discomfort and negatively affect purchasing behavior and loyalty (Otterbring et al., 2022). Other studies highlight that those situations not typically classified as service failures, like being ignored or waiting, can profoundly influence customer perceptions (Argo & Dahl, 2020; Lu & Sinha, 2023; Sinha & Lu, 2019). To address such failures, companies can orchestrate resources and activities for mutual benefit, known as a service recovery (Arsenovic et al., 2019).

Service Recovery: Restoring Interruptions of an Ongoing Service Experience

Service recovery generally encompasses all actions taken by a service provider to mitigate a customer's negative experience with a service offering (Arsenovic, 2021). However, employees often rely on intuition rather than set protocols for unvoiced failures. Effective recovery requires customers to actively voice their issues, yet many choose not to, resulting in numerous unresolved negative customer experiences. This situation underscores the need for practical strategies to address these less controllable but inevitable failures.

Academic literature suggests that service personnel should proactively anticipate potential service failures (Nazifi et al., 2021). Such preemptive strategies represent an effective and often overlooked recovery tactic, particularly for non-voiced customer issues. The importance of employee proactivity and the human interaction in addressing silent customers with disrupted experiences cannot be overstated. Building on this foundation, we propose five managerial recommendations for avoiding service failures and suggest proactive measures for service organizations.

Five Managerial Recommendations

We now turn our attention to offering practical advice for managers across all service organizations. This section outlines five key managerial recommendations which has emerged from our collective reading. Each recommendation address a critical aspect of service management and customer experience. The *first* recommendation emphasizes the vital role of service personnel's active and passive social influence in shaping customer attitudes, beliefs, and behaviors. This aspect is particularly challenging as adhering to social norms and meeting social expectations can be difficult in various service situations, potentially leading to service failures. Moreover, it's essential to recognize how a stressful service environment might cause service experiences to fall short, mainly due to the absence of certain social behaviors, which can have a lasting negative impact on the customer's perception of the service.

Our *second* recommendation highlights the importance of service employees' judgment calls. We specifically address the social nature of services and underscore

the necessity of relying on employee experience to ensure that both employee and customer needs and expectations are effectively met. The *third* recommendation centeres around the scenario where a service failure has already occurred. Here, we stress the importance of viewing service failures as collaborative efforts, highlighting the customer's role in service recovery situations. This approach shifts the paradigm from a unilateral to a more participatory method of addressing service failures.

The *fourth* advice focus on preemptive service recovery tactics. By drawing from scarce but insightful literature, we explore how companies can proactively manage customer expectations. This proactive stance is crucial in avoiding the escalation of minor issues into major customer issues. Lastly, our fifth recommendation examines the growing trend of digitalization in service environments. We advise companies to exercise caution before implementing robotic solutions. Such technologies, while innovative, lack the inherent human essence that is pivotal in social interactions. This absence can be misleading and may lead managers to overestimate the effectiveness of robotic units in fulfilling social roles within service settings.

Managerial Recommendation 1: Social Influence as a Source of Failure

The first managerial recommendation centers on the importance of the social influence exerted by service employees on consumer attitudes, beliefs, and behaviors. While service encounters are inherently rich in social interaction and form the cornerstone of any service exchange, there's a surprising lack of focus on how the absence of expected social interactions in these situations influences customers' service experiences. For example, an interruption in an ongoing service experience could stem from service personnel not paying sufficient attention to a customer. This aspect has been somewhat overlooked, as the service recovery literature has predominantly concentrated on how and what employees communicate to customers post-service failure and rarely considered the employees as a source of failure. However, the significance of employees' social behavior in shaping customer responses deserves more attention. Studies have shown that nonverbal interactions in service encounters can significantly influence customer responses, leading to effects that extend both in the short and long term (Argo & Dahl, 2020).

Our first advice is that service organizations should thoughtfully consider their store layouts to foster natural social interactions. The mere presence of service personnel has been proven to have a significant impact on customer responses (Söderlund, 2016), and the perception of being ignored has been shown to substantially affect customers' evaluations of both employees and service providers, especially in certain settings (Ward & Dahl, 2014). However, it's essential that social interactions are balanced and adhere to established social norms. Recent studies reveal that invading a customer's personal space can trigger a series of negative reactions, adversely affecting their comfort and overall experience. This can lead to reduced spending in the short term and, more significantly, loss of long-term loyalty

as customers who feel their personal space has been violated are less likely to return (Otterbring et al., 2022).

Considering this, we recommend that service managers not only invest in training employees on effective verbal communication but also emphasize the importance of nonverbal social behaviors during service encounters. It is essential for employees to understand how their nonverbal communication might manifest later in the service interaction. Service managers should pay close attention to socially expected nonverbal communication and its impact on the customer experience and the performance of the service provider.

Managerial Recommendation 2: Employee Empowerment and the Judgment Call

The second recommendation underscores the empowerment of employees, equipping them with the necessary training and support to make informed judgment calls when interacting with customers experiencing not necessarily apparent service failures. A judgment call refers to a decision made by an employee, drawing upon their professional experience in situations where clear policies or guidelines may not exist. These decisions are especially crucial in complex service scenarios where standard solutions are typically considered to be inadequate, and employees must rely on their prior experience, knowledge, and professional expertise to make choices that benefit both the customer and the company.

While existing literature highlights the importance of judgment calls in handling complex service failures, we advocate for their use even in less severe service failures. Often, such minor service failures are overlooked as they do not warrant significant attention. However, addressing these issues effectively can create a "delighting" effect on customers, exceeding their expectations and enhancing their overall experience.

These types of service recoveries interactions cannot be scripted and require employees who possess a high level of intuition, perceptiveness, and emotional intelligence. The role of social interaction in these service failure situations is paramount and should be approached as a complex, collaborative endeavor to resolve the issue (e.g., Arsenovic et al., 2019). Moreover, it is crucial for companies to learn from both successful and unsuccessful attempts at handling service failures, continuously refining their approach to customer service.

Managerial Recommendation 3: Service Recovery Is a Collaborative Endeavor

The third recommendation is to urge service managers to reconceptualize the role of customers in resolving service failures. Service recovery literature has traditionally focused on how companies can rectify failures while customers remain passive. We offer a thought-provoking and theoretically sound counterargument: service

organizations should develop recovery practices that view customers as recipients of recovery efforts and as active collaborators in creating solutions to service failures (Arsenovic et al., 2019).

Service scholars have long recognized the customer's role in value creation during service exchanges. However, the role of customers in the service recovery process is less explored and deserves more attention. Evidence suggests that collaboration during service recovery can be problematic if the level of collaboration does not align with that in the initial service delivery (Heidenreich et al., 2015). Yet, other studies indicate that customer collaboration in service recovery can enhance satisfaction and loyalty, particularly when compensation is used as a recovery tactic. This aspect is crucial since compensation is often seen as a highly effective recovery tactic to offset dissatisfied customers. However, recent research indicates that compensation alone is less effective and has a substantial impact only if it is not accompanied by collaborative efforts jointly between the customer and service personnel (Arsenovic et al., 2023).

Therefore, service providers should not solely focus on resolving issues quickly and efficiently. Instead, we recommend that service managers view customers' investment of time and effort in resolving problem situations as a valuable resource. By considering customers as active participants and co-creators in the solution, service recovery can become more dynamic and potentially more effective, especially in complex situations requiring multiple actors to interact and resolve the issue. Emerging research in the field of service management advocates for service personnel to proactively and attentively anticipate potential service failures (Nazifi et al., 2021). This proactive approach is crucial, considering that service failures may not always occur during the actual service provision but can stem from interruptions at any touchpoint, directly or indirectly caused by the service provider. Such interruptions can subtly impair the service experience, necessitating a preemptive strategy by service providers to minimize harm, even without explicit customer feedback.

Managerial Recommendation 4: Integrating Preemptive Service Recovery Strategies

Recognizing that no service organization is immune to errors (Kjeldgaard et al., 2021) and considering the uniqueness of each service organization in terms of its service offerings and customer base, our fourth recommendation is to customize preemptive service recovery strategies. These strategies should align with the unique needs and strengths of the service organization. Implementing "buffering" strategies is one practical approach to ensure that minor service failures do not excessively worsen customer stress (Nazifi et al., 2021). Although service literature in this area is sparse, some studies have identified contextual factors that can act as buffers. For example, brand equity can serve a preemptive strategy, as customers are more forgiving of brands with high equity, and companies heavily invested in sustainability initiatives can also leverage this as a buffering mechanism (Bolton & Mattila, 2015; Brady et al., 2008). Additionally, the literature indicates that

customers with strong relational ties to a company are less likely to voice complaints (Umashankar et al., 2017) and more forgiving when experiencing service failures (Worsfold et al., 2007).

Therefore, we advise managers to thoughtfully assess their organization's strengths and weaknesses and optimize practices that allow these strengths to serve as a "buffering" tactic against inevitable service failures. This tailored approach to preemptive service recovery not only mitigates the impact of service disruptions but also aligns with the organization's unique capabilities and customer relationships.

Managerial Recommendation 5: Think Twice Before Infusing Technology in the Service Environment

The fifth and final recommendation we present is a cautious approach to the integration of technology in the service landscape. Digitalization has led many service providers to consider employing robotic substition to human counterparts to reduce labor costs and improve service quality (Van Doorn et al., 2017). While on the surface, this seems like an efficient strategy to eliminate both human error and streamline operations, it's essential to recognize the unique value of human interaction in service delivery.

Services are traditionally labor-intensive, and the human element often represents a significant competitive advantage for many organizations. Recent literature suggests that robotic solutions are capable of substituting humans for simple social tasks, potentially offering a higher level of efficiency and consistency (Van Doorn et al., 2017). However, counterarguments from scholars highlight a crucial shortfall of such technological solutions: the lack of genuine human interaction, which can lead to negative customer perceptions of these robotic social units. Studies show that customers often prefer interactions with human employees over robots, particularly in situations where inherently human social interaction is valued (Frank & Otterbring, 2023).

There are specific scenarios where robots can effectively replace human roles, such as in transactions involving products that might cause embarrassment to customers (Sun et al., 2023). However, the decision to substitute human service personnel with robots should warrant careful attention. Emerging empirical evidence suggests that such substitutions can be detrimental in both the short and long term.

Therefore, our final managerial recommendation is to think carefully before implementing robotic units in service settings. Any move toward digitalization and the use of robots to enhance service quality and convenience should be balanced with human interaction. Robots can play a supportive role, but they should only partially replace human employees, especially in service recovery situations where empathy, understanding, and personal interaction are key.

Conclusions

Addressing service failures effectively remains a significant challenge for service organizations. Our examination of the service failure construct has led us to advocate for a broader understanding that encompasses any disruption in the ongoing service experience. This expanded view recognizes even the most subtle interruptions as impactful to the overall customer experience, necessitating adept service recovery strategies in today's highly competitive environment (Bolton et al., 2014).

The first recommendation is the critical role of social interaction by service personnel. Training staff to understand and properly execute both verbal and nonverbal interactions can prevent minor yet impactful service disruptions, enhancing the overall customer experience.

In our second recommendation, we emphasize the importance of empowering employees to make judgment calls in various service situations. This approach is especially valuable for handling not just complex service failures but also more routine issues, often overlooked yet capable of significantly affecting the customer experience.

Our third recommendation challenges the conventional notion of the customer as a passive recipient in the service recovery process. Instead, we propose viewing customers as active collaborators, contributing their efforts and insights toward resolving service failures, particularly in complex situations that require multi-actor solutions.

The fourth recommendation advises on the implementation of preemptive strategies tailored to the unique characteristics of each service organization. Recognizing and leveraging the organization's strengths can effectively buffer against service failures, ensuring a more resilient customer service experience.

Finally, our fifth recommendation addresses the cautious integration of technology in service environments. While acknowledging the efficiency gains from digitalization and robotic assistance, we stress the irreplaceable value of human interaction. Balancing technological advancements with the human touch is crucial, especially in service recovery situations where empathy and personal engagement are paramount.

In sum, our discussion underscores that service interactions are fundamentally about human connections, often supported but not replaced by technology. Effective management of service failures requires a human-centric approach, valuing empathy, flexibility, and collaboration. By empowering employees to act proactively and thoughtfully in service recovery scenarios, service organizations can leverage their skills and judgment to collaboratively solve issues with customers. This human-focused approach is not only critical during adverse service situations but is also integral to fostering lasting customer relationships and loyalty.

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Enhancing the Phygital Customer Experience in the Digital World

9

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Abstract

This chapter explores the concepts of customer experience (CX), phygital customer experience, and digital customer experience. We begin by examining the evolution of the concept of experience in the economy, including the challenges of effectively understanding and measuring experiences. We then delve into the challenges of understanding CX in the context of digitalization and automation, specifically through the lens of self-service technology. This chapter provides an in-depth examination of the conceptualization of CX in unmanned stores and offers insights into how researchers and practitioners can navigate this evolving landscape.

Key Takeaways

- The current and future developments in retailing and how they impact the customer experience.
- The role of digital solutions in a physical environment and how they can enhance the phygital customer experience.
- How unmanned stores and self-service technology provide an opportunity for retailers to increase their customer base and a seamless shopping experience for consumers.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_9

Revolutionizing the Customer Experience: How AI Is Transforming the Digital Landscape

The digital transformation will make life easier for customers and create the crucial components of a superior experience. As artificial intelligence (AI) technology is expanding and learning new ways to serve customers with easy-to-access experiences, there are opportunities for new tools and services that will enhance the possibility for companies to understand customer needs and respond to these needs with the push of a button. Unmanned, automated, unstaffed retail stores are opening in many locations, and we see new services that provide seamless experiences from purchase to last-mile delivery.

AI solutions such as chatbots help customers resolve issues (Camilleri & Troise, 2023). However, there is still greater potential, as many customers long for the assistance of an expert in their shopping journey, which AI solutions can provide. These solutions would not only do this as passive agents waiting for the customer but similar to front-line employees at the store, being active and helping customers make tailored choices. The customer-based AI solutions of the future will have a greater role when the number of available options confuses the customer. These solutions could help customers read reviews, provide information about the stock during the decision-making process, provide suggestions for price deals, or do whatever else the customer needs to do to purchase an item. The technology also opens the way for personal assistance in collaboration with other intelligent store-owned systems (Robinson et al., 2020). These systems can communicate and result in the customer feeling empowered and assured that the choices, recommendations, and suggestions are based on the customer's preferences, needs, and personality. These virtual assistants can help the customer by keeping track of and communicating with the company-owned AI functions. They can help by filtering and providing a data flow that is suitable for the customer.

In a phygital setting, that is, where digital solutions meet the physical environment (Banik, 2021), humanoid robots can have a crucial role. Robots can help customers throughout the customer journey as an assistant giving customers recommendations, navigational help, and a sense of socialization. By socializing with robots in stores, customers can co-create value in the experience while getting help from the robots. We have only started to imagine how AI and robotics will extend the customer experience, where unmanned stores are at the forefront of such technological solutions as the realm of the digital and physical meets; this is also known as phygital space.

Conceptualizing Customer Experience

There is increasing recognition of the importance of customer experience (CX), which refers to a customer's perception of the acquisition and use of a product or service. Becker and Jaakkola (2020) asserted that there is no universally accepted

definition of customer experience (CX), which has led to different conceptualizations, operationalizations, and findings across studies. Two of the most prevalent interpretations of CX are:

1. Customer experience is customer responses to firm-related contact (Lemon & Verhoef, 2016). These can be seen as the interaction between a customer and the firm.
2. Customer experience reflects the offerings that firms stage and manage (Pine & Gilmore, 1998). This is the overall experience that almost everything can be seen as an experience.

While the concepts of consumption experience (Holbrook & Hirschman, 1982) and the experience economy (Pine & Gilmore, 1998) have been identified, the field continues to evolve. Researchers and philosophers have sought to understand and measure experiences effectively, which has proven to be challenging. Despite differences in definitions, scholars have described CX as interactive, with the supplier actively participating in the experience, while the customer remains an essential component. Verhoef et al. (2009) stated that CX encompasses the entire customer journey—from search and purchase to consumption and after-sales—indicating that it extends beyond the moment of truth, which is the primary service encounter and direct interaction with the supplying party. Voorhees et al. (2017) asserted that "moments of truth" influence customer outcomes and that CX takes place through multiple interactions included in a core service offering. McColl-Kennedy et al. (2015) suggested that there are different ways to view the customer in CX, including as a consumer, user, co-creator, guest, actor, and participant. Helkkula et al. (2012) introduced a customer-centric perspective on CX, which linked the experience with the perceived value obtained by the individuals involved rather than delivered by the organizations to customers. Furthermore, the CX emerges whether the organization recognizes and influences it or not, with elements such as other customers and smartphones beyond the service provider's control (McColl-Kennedy et al., 2015). Hence, CX in a broader sense extends beyond the interaction between the customer and the firm, specifically with digitalization in mind, as this allows the sharing of experiences with a click of a button.

In today's phygital environment, our understanding of experience has been complicated by digitalization and automation beyond human involvement. At the same time, phygital solutions create the opportunity to measure customer experience, as in-store touchpoints can act as enhancers of experience and measure interaction. An example is a social in-store robot that can offer recommendations and, at the same time, measure the customer's affective mode through facial coding. This makes it possible for store managers to obtain an understanding of customers' emotions and behavior throughout the customer journey by employing digital technology and managing experiences in a phygital environment (Fig. 9.1).

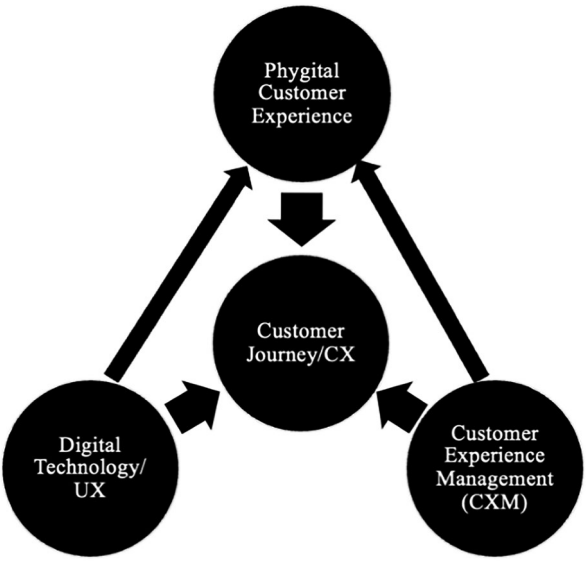

Fig. 9.1 Phygital customer experience

Customer Experience Is Everything!

CX pioneer Lewis Carbone posited that all services create experiences, and customers always have experiences, whether they are favorable or unfavorable. The critical question is whether a company can systematically manage the experience or leave it to chance. An experience is highly personal and involves the customer's engagement at various levels (rational, emotional, sensorial, physical, and spiritual). Carbone and Haeckel (1994) defined CX as the aggregate and cumulative customer perception created during the process of learning about, acquiring, using, maintaining, and disposing of a product or service. They further explained that CX encompasses the emotions that customers take away from their interactions with a firm's goods, services, and atmospheric stimuli. As in the example below, such stimuli may be plentiful and related to multiple senses. However, various customers may experience the stimuli differently.

Tomorrowland, a music festival in Boom, Belgium, has developed a reputation for providing exceptional and memorable experiences for its attendees. The festival actively engages its community through various social media platforms and applications starting in August, building excitement and anticipation for the event, which takes place over multiple weekends in July. The festival has become an integral part of the city, giving it a vibrant and festive atmosphere. To cater to local demand, preaccess to tickets is provided to Belgians; the entire festival sells out within minutes of release, resulting in approximately 200,000 tickets per weekend and a total of 600,000 tickets. Ticket acquisition commences in January/February, with those

fortunate enough to obtain them receiving special packages, including for example bracelets and scents, to further enhance their experience. The festival's attention to detail is evident in their provision of party flights and the creation of a village-like atmosphere that immerses attendees in the entire experience. The use of a unique scent, provided in the pre-event package, is also incorporated into the camping area, thereby evoking nostalgia long after the festival's conclusion.

The Future of Convenience Is Phygital

Customer experience includes social, sensorial, cognitive, emotional, and physical elements (Lemon & Verhoef, 2016). These experiences can be achieved by physical, digital, and/or phygital involvement (Banik & Gao, 2023). The phygital experiences connect the digital and physical worlds, creating a unique customer experience (Banik, 2021). "The Phygital experience consists in hybridizing the physical and the digital components at the same time and in the same place" (Belghiti et al., 2017, p. 61). Physical components, such as products, and digital components, such as interactive store elements, exist at the same time in the same place, which makes the experience phygital. Physical channels are being advised to shift toward a phygital strategy (Trendwolves, 2014), which can be done by integrating digital elements into the physical store. This can help maintain the authentic experience of the store, but with the convenience of the online platform, bridging the gap between the online and offline worlds (Trendwolves, 2014). As AI is transforming the digital landscape, many experiences have a digital element that enhances the experience and makes it more convenient, and this component is expected to increase.

Since customers engage with retailers using digital and mobile devices, the customer journey has changed (Gauri et al., 2021). Retailers are experiencing liquid consumers as a new form of omnichannel is rising, which is connected to phygital stores (Belghiti et al., 2017), and there is a shift in consumer buying behavior (Hult et al., 2019) due to newer technologies. The customer journey needs to be mapped to identify opportunities to enhance the CX and the points of friction. There are different ways to reduce friction in the consumer's shopping process, removing obstacles by shortening wait time, reducing inconveniences, and eliminating unnecessary steps in the journey (Gauri et al., 2021).

Thus, the CX has focused on the main service encounter from the consumer's point of view to a more interactive definition in time and space, including the supplier, and product, but also pre-service, core service, and post-service encounters. This puts the customer—or the user, consumer, co-creator, or guest (McColl-Kennedy et al., 2015)—at the heart of the experience, with psychological processes helping to grasp the experience. Prevailing examples seem to suggest a direct encounter between supplier representatives and customers, with digital or unmanned encounters potentially requiring a redefinition of the concept. This leads to the following question: Does the impact of the technology differ depending on whether the environment is digital or a bricks-and-mortar (B&M) environment?

Technology as a Phygital Enabler in the Interactions

Grewal et al. (2021) argued that the world of retailing is being transformed and reimagined. This is occurring rapidly because of new technologies and changes in consumer purchasing behavior. Since adhering to emerging technologies in grocery stores, the area has evolved with examples such as online stores, self-service technology (SST), self-scanning, and unmanned stores. Grewal et al. (2021) argued that retail formats have evolved, mostly in the form of B&M retailers moving into online channels. The opposite has also occurred, with online players moving into B&M spaces, such as when Amazon acquired whole foods and opened the Amazon Go stores.

Rose et al. (2011) explained that the online and offline CX can vary. One difference is the degree of personal contact, and another is the way information is provided. However, the most essential difference is availability to the customer. Online, customers can purchase at a place and time that suits them. Offline, customers are restrained due to the store's opening hours (Rose et al., 2011). In the phygital space, where unmanned stores can be open 24/7, customers can get the best of both worlds.

Most of the extant research on CX has taken the direct encounter between the supplier and customer as its point of departure. Larivière et al. (2017) described the service encounter and its rapid change due to evolutions in new technologies. They found that technology can foster network connections and substitute or augment service employees. Customers and employees are taking turns in the roles of enabler, innovator, coordinator, and differentiator. Technology implemented by the company impacts the service encounter and the humans involved in it (Larivière et al., 2017). Therefore, digitalization and automatization would challenge known conceptualizations. Given that we live in the age of customization and a wide range of choices is available for consumers (Hoyer et al., 2020), new technologies can positively impact how we determine the best alternative, thus enhancing the CX. Ramasundaram et al. (2023) noted how the fluidity of digitalization changes the CX; their definition of fluidity described the ability of digital platform ecosystems to align with changing consumer preferences to remain relevant in the marketplace. This refers to how digitalization allows an adjustment to individual customers and thereby creates offerings that are closer to their desired expectations. Ramasundaram et al. (2023) indicated how digitalization is thought of as enabling intermediation, algorithmically coordinating, and through data making customer offerings individualized. Less information is available regarding the direct digitization of encounters and the extent to which humans are being replaced in such interactions. Today, many companies develop different digital solutions to replace humans in the service encounter, which is also known as self-service technology.

The Self-serving Customer

Self-service technology creates the possibility for customers to serve themselves without the need for assistance from a human employee. Such technologies include

automated stations, self-service portals, chatbots, and voice response systems. SST is used within retailing, banking, hospitality, and many other areas to improve efficiency and customer experience. For customers, SST can provide a more convenient and efficient way to access products and services (Meuter et al., 2000). An example is unmanned retail stores for fast-moving consumer goods. SST at a retail store can create a higher likelihood of repeat purchases, as customers will have a positive shopping experience. On the other hand, SST can provide several benefits for companies, as the technology reduces labor costs and provides customers with more control and autonomy in their interactions with the company. This can create a positive attitude toward the company and a higher likelihood of returning to the store or service. Another perspective on SST is that companies gain deeper insights into customer behavior, as digital services can track and analyze interactions to pinpoint improvement areas. An example is the use of chatbots, which provides a steady stream of data about important aspects of the service interaction. Hence, companies that use self-service technology can collect valuable data on customer behavior (Grewal et al., 2018), which they can use to improve their products and services.

Unmanned Stores

Unmanned stores are a new and innovative topic, but their recent development has meant that there is a shortage of literature on the subject (Gazzola et al., 2022). These stores are a great example of self-service technology. In a survey conducted by Gazzola et al. (2022), it was found that 34 percent of the respondents expressed dissatisfaction with the duration of e-commerce product deliveries, while 25 percent were unwilling to bear shipping fees. These findings indicate that customers are not yet prepared to completely forsake physical stores. A physical store sells over 10 times more goods than an online store, indicating how people tend to spend more money in a physical store (Gazzola et al., 2022). This, combined with the fact that 64 percent of sales are made in-store (Gazzola et al., 2022), suggests that it is important to maintain a physical location. Customers increasingly expect the experience of digital shopping, so retailers need to adapt. An unmanned store aims to create a new, convenient, and fulfilling experience where customers can avoid wasting time in queues and long checkout times. Unmanned stores can be seen as self-service technology stores since the technology, as well as the self-service, is part of the service encounter. By transferring to unmanned stores, retailers save costs by removing staff and also collecting data on consumer behavior (Park & Zhang, 2022). Guo et al. (2020, p. 55) explained that "unmanned stores enable a closed loop for interacting with consumers, collecting real-world interaction data, and gaining the insights that can help brands and retailers deliver personalized marketing information at the right customer touchpoints and deliver a better consumer experience."

The advanced technology involved in an unmanned store is an attempt to bridge the gap between the online and the offline world (Wankhede et al., 2018). The physical components, such as products, and the digital components, such as

touchscreens, are at the same time in the same place, making the experience phygital. In an unmanned store, much of the CX is left in the hands of the individual; this can have different outcomes that will lead to a diverse customer journey and dissimilar satisfaction.

Looking at the opportunities retailers are given when combining different technologies, we can understand that consumers are approaching a seamless experience without friction at any given touchpoint. For example, the technologies combined in an unmanned store allow consumers to walk in and acquire products without any effort other than for example finding the right options that have been forgotten when shopping previously. In combination with cooled parcel boxes, an unmanned store provides an optimal experience to pick up orders and complement necessary items. The stores can be positioned on a street corner in an urban or suburban setting and run 24/7 with logistics backing up stock and delivery to parcel boxes for online shopping. However, there are some drawbacks related to waste due to theft and product assortment. Furthermore, some customers are hesitant about a lack of social presence. On a general level, combining technologies with the versatility of unmanned stores and parcel boxes will shift the future of retailing toward phygital shopping behavior as customers will embrace more omnichannel solutions that enhance the customer experience.

Unmanned stores have adopted the traditional retail service model, enabling consumers to avoid the hassles that otherwise would be associated with salespeople and checkout queues. In 2018, Amazon Go pioneered the concept of unmanned stores when it opened its first store to the public. By 2022, there were 27 such stores in the USA and 19 Amazon Fresh stores in the UK. Amazon Go considered opening as many as 3000 stores in the USA. Other start-up companies are now embracing the challenges and entering the unmanned retail market. Today's unmanned stores are partially automated, which enables customers to purchase products without being checked out by a cashier or using a self-checkout station. These stores use the same technologies as used in self-driving cars, such as computer vision, sensor fusion, and deep learning (Wankhede et al., 2018). These techniques can sense when products are being picked up or put back on the shelves and keep track of the products in the customer's virtual shopping cart. When customers leave the store, the products are charged to their Amazon account and the customers receive a receipt.

Identifying New Touchpoints

When a customer encounters a brand in any situation, it is described as a touchpoint. De Keyser et al. (2015) identified different categories of touchpoints related to the CX. These are brand-owned, partner-owned, customer-owned, and social/external/independent. "CX is formed through 'touchpoints' (T) which are embedded in a broader 'context' (C) and marked by a set of 'qualities' (Q) that, together, result in a value judgment by the customer" (De Keyser et al., 2020, p. 437). Touchpoints can be digital (e.g. website), human (e.g. cashier), physical (e.g. store environment), or a combination of digital and physical namely phygital (e.g. self-service display). De

Keyser et al. (2020) referred to the touchpoint nature, which reflects the way the brand is represented in the touchpoint. Context is defined as "the conditional state that determines the resources an individual can directly or indirectly draw on at some point in time" (De Keyser et al., 2020, p. 440), while qualities are attributes that reflect the nature of the customer experience (De Keyser et al., 2020). In a phygital setting, these qualities can be represented by interactions with digital tools that streamline the experience of the customer. An example is customer participation level in interaction with the digital solutions, as customers can design their own experience throughout the journey and tailor the best experience for themselves.

While touchpoints have been described as important in the traditional CX literature, the digital revolution has brought some additional touchpoints and environments, such as social media, e-commerce, and mobile platforms as new environments. With these new touchpoints in the new technological environment, it is important to identify key outcomes tied to the CX (Hoyer et al., 2020). Consumers can use the Internet of Things (IoT) to aid their decision process and provide a richer consumer experience since it provides them with rich and detailed information (Hoyer et al., 2020).

The Evolution of Customer Experience: Current State of Knowledge and Future Perspectives

The CX has been evolving in parallel with technological development, which has resulted in new implementations of technology in the customer journey. Looking at the CX across traditional stores, digital and phygital CXs of the past, present, and future provide us with an understanding of the evolution. Table 9.1 emphasizes how CX has digitalized over time and type, while digitalization and AI have increased the number of touchpoints, albeit changing them from human to non-human. At best, the phygital CX of the unmanned store would take the best of the physical and digital world, enhancing the CX further, including both human and non-human touchpoints. If we return to the two prevailing definitions of CX (Lemon & Verhoef, 2016; Pine & Gilmore, 1998), we envision how the phygital CX entails a more interactive CX, extended through digital touchpoints, where the experience thereby becomes more customer-centric, before, during, and following the service encounter.

The ongoing digital transformation is creating exciting opportunities for companies to enhance customer experiences by leveraging AI technology and other digital tools. The emergence of unmanned stores and seamless services are already changing the way we shop, but it is crucial to recognize that the human touch is still necessary, especially during service failures. Chatbots are helping customers to resolve issues, but they have the potential to be much more, serving as personal assistants throughout the shopping journey. Moreover, as the use of robotics in stores increases, customers can co-create value in the experience while getting help and interaction from the robots. Ultimately, the success of digital transformation relies on the ability of a company to leverage technology to create a superior customer experience while recognizing the value of the human touch. The field of customer experience

Table 9.1 CX over time and type

	Customer experience		Phygital customer experience		Digital customer experience	
Past 1980–2000	High social interaction in-store Blueprint perspective Limited touchpoints	Physical salesperson-assisted transaction Low SST	Minimal digital touchpoints Limited use of technology in physical space	Queue ticket Digital signage Credit card transactions Digital price check	Limited website functionality Limited or no social media presence	E-commerce Price comparison Forum before shopping
Present 2000–2020	Personal interaction with staff and physical environment Customer experience perspective	Digital salesperson-assisted transaction Moderate SST	Combination of digital and physical touchpoints	Self-scanning interactive media augmented reality QR codes In-store click & collect Last-mile delivery parcel locker	Emphasis on the website and social media engagement	Chatbot Live shopping Virtual reality Platform economy P2P economy Blockchain
Future 2020–2040	Greater use of AI and automation Greater emphasis on personalization New perspective of CX—from individual to society Experience of society	Digital interactions; High SST.	Greater integration of technology in physical space Greater use of personalized data	Virtual AI assistant digital representation	Greater integration of virtual and augmented reality Greater personalization	Metaverse Fast drone deliveries Dark stores

(CX) has evolved significantly, and the importance of providing exceptional experiences to customers has become increasingly recognized. With the rise of self-service technology and digitalization, managing customer experiences has become more complex, not least with the rise of unmanned stores. However, the key to success lies in understanding and managing the customer's engagement in various dimensions, including rational, emotional, sensorial, physical, and spiritual.

The future of CX is moving toward a phygital strategy, which integrates physical and digital elements to create a unique and convenient experience for customers. This is essential given that consumer buying behavior is changing due to new technologies and customers are using digital and mobile devices to engage with retailers. To enhance the CX and reduce friction, retailers need to map the customer journey, remove obstacles, and provide a seamless experience. With CX putting the customer at the heart of the experience, the impact of technology on CX may differ depending on whether the environment is digital or B&M. Overall, a customer-centric approach to CX, incorporating the latest technology, is essential for a retailer to remain competitive and meet the needs and expectations of today's consumers. While physical stores still generate more sales than online stores, retailers need to adapt to the new omnichannel form, including unmanned stores. Therefore, unmanned stores and self-service technology provide a unique opportunity for retailers to increase their customer base and offer a seamless shopping experience for consumers.

The fluidity of digitalization changes the CX, enabling intermediation and algorithmic coordination and individualizing customer offerings. Identifying new touchpoints is essential, as traditional ones are now complemented by new ones such as social media, e-commerce, and mobile platforms. Overall, consistency in branding, messaging, and design across all these touchpoints can create a cohesive and positive experience for customers. Companies need to provide excellent customer service to reflect their overall quality. Finally, the implementation of technology by companies impacts the service encounter and the humans involved in it.

Managerial Considerations

Companies should invest in digital solutions to improve the customer experience. This includes developing AI-driven solutions that can serve as personal assistants throughout the shopping journey and implementing robotics in stores to provide help and interaction to customers. While digital tools are important, it is also essential to recognize that the human touch is still necessary, especially during service failures. Companies should make sure to balance the use of technology with the need for human interaction. An example is implementing social robots in unmanned areas to assist customers in their customer journey. The robots can assist with navigational purposes in-store or provide information about different aspects of the customer journey. As consumer buying behavior is changing due to newer technologies, companies should embrace a phygital strategy that integrates physical and digital elements to create a unique and convenient experience for customers. This includes

mapping the customer journey, removing obstacles, and providing a seamless experience. Companies should adopt a customer-centric approach to CX, incorporating the latest technology, to stay competitive and meet the needs and expectations of today's consumers. This includes identifying new touchpoints, providing consistency in branding and messaging across all touchpoints, and offering excellent customer service. Companies need to recognize that the implementation of technology impacts the service encounter and the humans involved in it. This includes ensuring that employees are adequately trained to work alongside technology and that the technology enhances the service encounter, rather than detracting from it.

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Balancing Value Propositions with Privacy: Exploring Data-Driven Digital Wellness Business Models

10

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Abstract

This chapter investigates the role of user data in creating value propositions within digital wellness business models and the implications for consumer privacy. We examine user agreements of seven such platforms/apps, exploring how consumer data are utilized to enhance customer experiences and generate profits, while addressing privacy concerns. The main findings reveal six value propositions derived from user data, which are further problematized in the discussion. By combining consumer data and privacy research with a business model perspective, this chapter provides insights for managers seeking to navigate the complexities of data-driven digital business models while respecting consumer privacy and integrity.

Key Takeaways

- Consumer data are utilized in business models to enhance customer experiences and generate revenues.
- Six value propositions derived from user data are identified and described.
- Businesses have a responsibility to act in the best interests of their customers when it comes to the handling of personal data.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_10

Introduction

In today's digital business landscape, creating attractive value propositions through user data has become a critical imperative. With the rise of AI, machine learning, and CRM systems, businesses have the tools to systematically sort big data quantities into insights that enhance customer experiences and create personalized customer value and profit for companies (Martin & Murphy, 2017; Grandhi et al., 2021). However, in the quest to understand, predict, and shape consumer behavior, privacy concerns often arise, with data being treated not only as a resource but also as a commodity to be sold and circulated on markets (West, 2019). As a result, the use of consumer data can be problematic and lead to intentional and unintended privacy concerns. In response to this challenging situation, governing bodies like the European Union have regulated private data collection through the General Data Protection Regulation (GDPR). A consequence of this law is that companies have formulated privacy notices in privacy policies describing how they use collected data. However, these notices are often presented in dense and formal language that many people find difficult to comprehend; consequently, most people do not carefully read through the terms and conditions for using the websites or apps and are therefore not aware of how the data they leave on platforms and applications are used (Martinez-Martin & Kreitmair, 2018).

User data collected on direct-to-consumer digital wellness platforms/apps, such as those for weight loss, training, or self-development, can be considered particularly sensitive since consumers need to leave personal information on their lifestyles, such as their eating and training habits, health, and other private issues. Most of these digital companies are for-profit and not connected to a health insurance carrier, which means that some of them rely on a business model where they monetize on the collected user data (Ajunwa, 2017), especially if they are free or low cost. At the same time, consumers may not be aware of the various ways their information is collected and analyzed, and that the service firm may share or sell data for marketing or other purposes (Martinez-Martin & Kreitmair, 2018).

A few studies have addressed the role of consumer data related to business models, such as Saura et al.'s (2021) systematic review of how social media platforms use consumer data, Duan et al.'s (2022) findings on how privacy concerns and information disclosure influence digital business models, and Hartman et al.'s (2016) study of start-up firms resulting in a taxonomy of data-driven business models. However, more research is needed to understand the role of consumer data in creating value propositions in digital business models and how consumer privacy and integrity are protected in the process.

This chapter aims to describe the role of user data as a resource within digital business models used to deliver value propositions and, in relation to this, discuss consumer privacy. Specifically, we study the user agreements of seven direct-to-consumer digital wellness platforms/apps. While there is a growing body of literature addressing consumer data and privacy, it is not often paired with a business model perspective. This leaves businesses lacking guidance regarding developing and understanding new data-driven business models. By shedding light on how to

create value propositions by using consumer data, at the same time as respecting consumers' privacy and integrity, this chapter helps managers navigate the complex world of data-driven digital business models.

Business Models and Value Propositions

Although the literature on business models is expanding, it is still in its early stages, with different theoretical streams exploring different aspects of business models. Zott and Amit (2010) proposed an activity system framework that encourages holistic thinking in business model design, focusing on content, structure, and governance, as well as design themes such as novelty, lock-in, complementarities, and efficiency. Perkman and Spicer (2010) grouped business model contributions into three conceptions: transaction structures, mechanisms for creating value, and devices for structuring and designing organizations. The Business Model Canvas, introduced by Osterwalder and Pigneur (2010), is a commonly used model that identifies key factors involved in business models, including key partners, key activities, key resources, value proposition, customer relationships, channels, customer segments, cost structure, and revenue streams. At the core of business modeling is value proposition, creation, and capture (Budler et al., 2021). Payne et al. (2017) defined a customer value proposition as a strategic tool that facilitates communication of an organization's ability to share resources and offer a superior value package to targeted customers. In short, it is a way to help customers get an important job done (Johnson et al., 2008).

Despite the variety of definitions and frameworks for business models, it is possible to identify two different theoretical streams in the literature. One stream takes a more holistic approach, emphasizing the need to consider multiple dimensions of the business model, including not only its content and structure but also the broader context in which it operates (e.g., Zott & Amit, 2010). This approach recognizes that the business model is not just a static framework, but also a dynamic process that is shaped by both internal and external factors. The other theoretical stream takes a more organization-centric approach, focusing on the internal design and structure of the business model. This approach tends to view the business model as a set of strategic choices made by the firm to achieve its goals and often emphasizes the importance of aligning these choices with the firm's capabilities and resources (e.g., Johnson et al., 2008; Osterwalder & Pigneur, 2010; To et al., 2020).

While these two streams are not mutually exclusive, they do reflect different perspectives on the nature of business models and the challenges of designing and implementing them. Both streams highlight the importance of creating value propositions that resonate with customers, but they differ in their emphasis on the broader context of the business model and the internal design choices made by the firm. This chapter deploys an organizational-centric approach, utilizing the seminal framework presented by Johnson et al. (2008), which emphasized that the central element of a business model is to create attractive value propositions by combining three interlocking elements: profit formula, key resources, and key processes. Successful

businesses combine these elements into stable systems in which they work complementarily. This chapter adopts an organization-centric approach for two reasons. First, an organization-centric approach can offer valuable insights into the internal dynamics of a business, the factors affecting legal and regulatory compliance, and the allocation and management of resources (Osterwalder & Pigneur, 2010). Second, as the present study departs from user agreements, analyzing them from an organizational perspective can reveal insights into resource allocation within the company. By examining how resources are utilized and managed, businesses can make informed decisions about future investments and strategic planning (Chesbrough, 2007), which can ultimately lead to the creation of more effective and user-centric agreements.

Data-Driven Business Models and Privacy

The impact of digitalization on business models has been significant, with most models now incorporating digital technologies to deliver value propositions (Bouncken et al., 2021). A driving force behind this change has been the increasing amount of data available and the advances in analytics (Fruhwirth et al., 2020). Hartmann et al. (2016) defined a specific type of digital business model—the data-driven business model—as a model that relies on data as a key resource. These business models involve companies conducting analytics, aggregating or collecting data, and selling not only the data but also any other product or service that relies on data as a key resource. To create attractive value propositions, digital businesses rely on various types of consumer data. Morey et al. (2015) identified three categories of user data. The first is self-reported data; that is, information that customers voluntarily reveal about themselves, like age and gender. The second is digital exhaust, which is information captured by cookies such as location and browsing history. The third category is profiling data, which combines the previous two categories to make predictions about individuals' attitudes and behaviors. The same authors also examined three categories of how companies use data: (1) making a product or service better, (2) facilitating targeted marketing or advertising, and (3) generating revenues through resale to third parties. Morey et al.'s (2015) study revealed that people place the highest value on value profiling data, followed by digital exhaust, and self-reported data least, and that the value consumers place on their data increases as its sensitivity and breadth increase and as its uses move from principally benefiting the consumer to principally benefiting the firm.

Privacy is highly relevant in the context of data-driven business models. As far back as 1890, Brandeis and Warren (1890) wrote about privacy in relation to the invasion of private lives by the photograph and newspaper industries, calling for attention to privacy as the right to be left alone. Even then, they were warning that "numerous mechanical devices threaten to make good the prediction that what is whispered in the closet shall be proclaimed from the house-tops" (ibid, p. 195). Martin and Murphy (2017) defined consumer privacy as the control of the dissemination and use of consumer information, including demographics, search history,

and personal profile information. Violation of consumer privacy in this context involves unwanted marketing, highly targeted advertisements, and online tracking. Martin (2016) discussed three different approaches to privacy: the access view, the control view, and context-dependent norms. The access view categorizes sharing information as necessarily giving up any expectation of privacy, while the control view of privacy is regulated by adequate notice and choice in Fair Information Acts. The context-dependent approach views privacy as mutually beneficial and sustainable agreements within a community, involving unstated agreements that individuals and groups make in contexts, communities, and relationships.

Bonazzi et al. (2010) developed a framework for the dialectic process between users and service providers, where the user can decide how much personal data to disclose, and the service provider decides what level of personalization to offer in exchange (see Fig. 10.1). As the authors describe, the bottom left quadrant of the figure concerns value propositions equivalent to a standard non-personalized offer, whereas the top left quadrant features business models that collect large amounts of data in exchange for poor service. The fully personalized service proposition with a fully identifiable user is a typical Web 2.0 approach that enables businesses to profit from sales of data, but also involves concerns about privacy. The authors suggest that the bottom right quadrant involves privacy-oriented business models that are focused on personalized value creation and privacy protection. To achieve this, Bonazzi et al. (2010) proposed the use of infomediaries, which serve as a trusted third party between customers and digital firms. The infomediary would act as a two-sided platform company helping customers and digital businesses get together in a secure, privacy-friendly way.

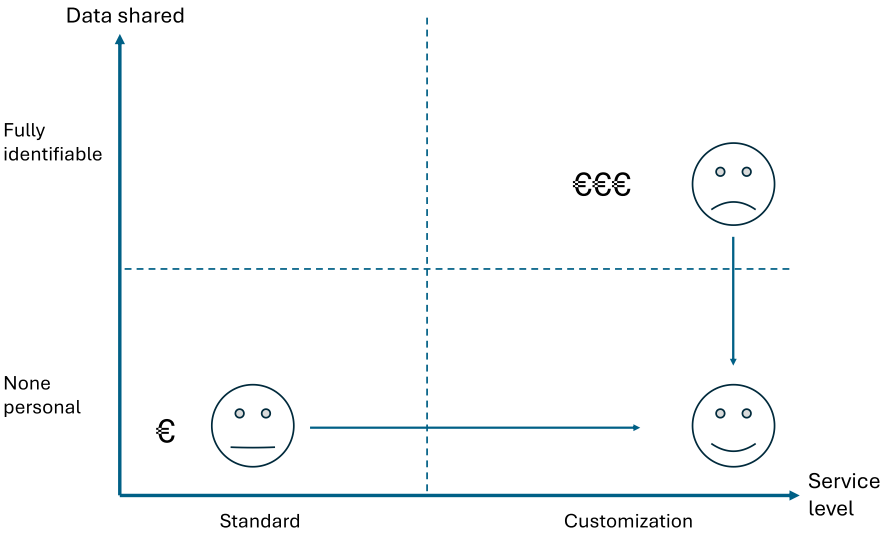

Fig. 10.1 Framework to assess business models for privacy management (Extending Bonazzi et al. (2010))

In conclusion, digital businesses rely heavily on data and analytics to create attractive value propositions; as a result, consumer privacy has become a critical issue. From a corporate social responsibility perspective, firms can take different positions on privacy issues, ranging from a defensive approach to a more proactive approach that works actively with privacy issues to uphold consumers' integrity. As consumers become more aware of privacy and place a higher value on it, companies can justify themselves as ethical actors by communicating their privacy policies and ensuring consumers' informed consent. Overall, in the process of building data-driven business models, it is vital to balance the integration of consumer data as a resource to create value propositions against the importance of handling consumer privacy concerns. By focusing on privacy-oriented business models, digital service businesses can earn consumers' trust, foster long-term relationships, and ultimately enhance their competitiveness in the market.

Digital Wellness Business Models

This section presents the results of the study. The chapter draws upon multiple case studies to describe forms of value propositions, in relation to their reliance on user data as a resource, and processes of data collection, usage, and storage. A selection of the seven most downloaded digital applications in 2021 focusing on wellness, from Apple's Appstore in Sweden, was chosen for analysis. Two applications focused on physical training, one on female health, two on diet and weight control, one on childcare, and one on mental health. Empirical data were collected by document analysis (of the companies' privacy notices relating to how they use consumer data). As the first order of analysis, we coded all the user agreements, focusing on the business model elements as presented by Johnson et al. (2008): value proposition, key resource, key process, and profit formula. Once these codes were identified, a second-order analysis involved the composition of themes departing from the different value propositions acknowledged in the user agreements.

Overall, the studied digital wellness businesses collected a great deal of information on their users. This included everything from basic personal details, such as name and email addresses, to more specific information, such as online shopping history, search history, and device information. Demographic information, such as age, gender, income, and education level, are also commonly collected, as well as location data, such as GPS coordinates and IP addresses. Social media profiles and interactions are often used to build a picture of users, and data from email and chat conversations are also collected. All of the digital wellness businesses described how and why they collected user data and how this was related to their value proposition in their privacy agreement. Most had done so in a systematic way; for example, with tables showing what type of data was needed in order to provide which offering. While this might not be surprising given the regulation of GDPR, it was not the case with all of the privacy agreements. Some were simplified, but others were complicated and required extensive analysis in order to determine why they actually needed (or wanted) to collect the user data.

In general, consumer data collection is a complex process that involves several key steps and actors. At the heart of this process are the digital wellness businesses, as they are responsible for collecting user data through online forms, cookies, and other tracking technologies. This data is stored in databases, either on their own platforms' servers or through third-party cloud storage providers. Once the data are collected and stored, they are processed and analyzed. This is done to extract insights and make decisions that can be used for a variety of purposes, including service provision and customization. The processed data may also be shared with third parties, such as trusted business partners, advertisers, research organizations, and so-called data brokers, who gather data on customers from different sources and sell it to businesses that want to target specific groups of customers. Other actors involved in this process include government agencies overseeing data protection and privacy laws, and technology companies providing the underlying technologies used for data collection, storage, processing, and sharing.

Value Propositions and User Data

Six distinct value propositions were recognized in the analyzed material (see Table 10.1). First, most digital wellness businesses collected data in order to provide a seamless customer experience and (1) *ease of use*. As with most digital services, customers want to gain access and use the app without any hassle or disruption. To achieve this, users are required to share data because many different analytic systems and actors are at play. For example, users might prefer to use their social media accounts in order to sign in on a fitness digital service platform. They may then want the latest data from a fitness activity, which may be registered by another service provider, and then integrated and presented on their smartwatch. Therefore, the sharing of personal data across different service providers is vital in order to provide simple digital services that are easy to use. Furthermore, customers are used to having simple options for payment and might also want to split the payments using a variety of different financial options. This is also highly fundamental from a company perspective since it is important for the service onboarding process to maximize customer adaptation.

Most privacy agreements also address the storing and safekeeping of usage data, personal information, and social media account information. The digital wellness business argues for its importance not only to provide a functional service, but also to give customers the option to (2) *opt out* from the service and re-adopt it if they regret signing off, or if the customers would like to simply take a break from the service and come back as a customer at a later occasion when there is a need for it again. One example of this is "Pause Subscription," which enables users to temporarily opt out of a service while preserving their account details and preferences, making it seamless to re-join later without starting from scratch. Along with this, the privacy agreements also address opting-out options for parts of the service demanding user data, which might be sensitive to the individual customer as a part of the service offering.

Moreover, the digital wellness businesses frequently brought up (3) *gamification of service experiences* as added value to the service. Gamification refers to the use of game design elements and mechanics in non-game contexts, such as digital services, in order to increase engagement and motivation among users (Deterding et al., 2011). The privacy agreements described gamification as various arrangements, such as point systems, leaderboards, progress tracking, rewards, and challenges. The goal of gamification was to make the experience of using the digital wellness service more enjoyable and engaging by tapping into people's natural tendencies to compete and cooperate, as well as their desire for progress, recognition, and rewards. However, this was not only referred to as a value-adding feature to the customers; it was also related to the digital wellness business profit formula, where the customers could unlock various offers from third parties or as a way for the customers to pay in order to reach the "next level" of the service.

Furthermore, one of the main points in the privacy agreements was that the user data is vital in order to create a (4) *customized service experience*. By collecting and analyzing information on users' preferences, behavior, and personal information, the company can personalize its service and tailor recommendations and content to individual customers' interests and preferences. An example is fitness apps that collect user data and activity recordings for customizing a training plan from the users' individual abilities and goals. The collected data can also be used to improve the overall user experience by identifying patterns and making improvements to the service based on users' feedback and interactions.

Another value proposition that was valid in some of the cases was (5) *customized offerings*. Similar to *customized service experience,* by collecting and analyzing information on users' preferences, behavior, and personal information, information is used to personalize offerings and advertisements targeting individual customers. As some of the digital wellness businesses were free of charge, the profit formula was supported by either selling the user data or refining it and making the individual customers subject to offers and advertisements on the platform or on other channels such as social media. In some cases, the digital wellness businesses sold the user data to data brokers. Allowing customers to sign up for the digital service makes it possible to collect and sell usage data and personal information to third parties. Also, customers signing up to a low/no-cost app can be converted to premium prescription models.

Finally, (6) *service-sharing possibilities* were brought up as a value proposition that is dependent on user data. Sharing the service experience in different ways on social media or in the service itself could help customers feel more connected to the service and its community by being able to interact with others who are using the service. By sharing, customers connect to a community and gain social recognition for their fitness or wellness efforts. For instance, the digital wellness businesses enable seamless sharing of users' workout achievements and progress updates on social media platforms in order to foster motivation, accountability, and community engagement among like-minded fitness enthusiasts.

Table 10.1 Key value propositions in data-driven business models of digital wellness businesses

Value propositions	Key data resources	Key processes	Profit formula	Other entities	Description	Example
Ease of use	Service activity tracking, personal information, location and physical movement, social media account information, payment information	Marketing and customer research, correcting service failures and problems, verifying usage, compliance and transactions	Customer onboarding and customer retention	Chosen business partners	The digital services use multiple sources of data to make the digital service easy to use. This provides easier service adoption and a more pleasant service experience, leading to customer retention.	Users accessing their using their social media account to sign in on the digital service platform
Opt-out options	Usage data, personal information, social media account information	Marketing and customer research	Customer onboarding and customer retention	Chosen business partners	Tracking and keeping customers' profile data lets customers opt out and be able to re-join the service with lower barriers. Customers are also given choices to opt out from different data sharing options.	Pause Subscription, which allows users to temporarily opt out of a service while preserving their account details and preferences, making it seamless to re-join later without starting from scratch

(continued)

Table 10.1 (continued)

Value propositions	Key data resources	Key processes	Profit formula	Other entities	Description	Example
Gamification of service experience	Location and physical movement, personal information, service activity tracking	Service development, marketing, social media integration	In-service purchase, customer retention	Chosen business partners, third-party marketing, data brokers	Through service usage progress, leveling and the like, customers can unlock different offers and in-service content. This can also lead to unlocking deals from third parties.	Gathering service activity data allows service providers to develop the service to a game-like experience, also leading to opportunities to the profit formula
Customization of service experience	Location and physical movement, personal information, service activity tracking	Service development	Customer onboarding, customer retention, in-service purchase	Chosen business partners, research	The service experience can be customized based on service usage and personal information and customers' location. This creates possibilities for customized offerings from service providers and third parties.	Fitness apps collect user data and activity recording to customize a training plan based on the users' individual abilities and goals.

Customized offerings	Location and physical movement, personal information, service activity tracking	Social media integration, third-party sharing	Selling personal data to third parties, customer upselling	Chosen business partners, third-party marketing, data brokers	By signing up to the service, the user data are shared to third parties for advertisements on social media platforms and/or other channels. Customized offers may also come from the service provider itself with offers based on service usage.	Third parties (including advertising networks and providers of external services like web traffic analysis services) may also use cookies, over which users have no control
Service- sharing possibilities	Social media account information	Social media integration	Customer retention, Service marketing	Social media companies	Allowing customers to share their service activities and efforts creates an effect of self-congruity to the service	Fitness goals and efforts can be shared to friends and family through social media platforms, creating motivation and community engagement.

Discussion and Conclusions

This chapter set out to understand the role of consumer data in creating value propositions in digital business models and how consumer privacy and integrity are protected in the process. The findings from our study show that digital wellness businesses collect a great deal of information about their users, including personal details, online activity, and demographic information, covering all of the previously mentioned categories of user data: self-reported, digital exhaust, and profiling (Morey et al., 2015). This data is a key resource in the digital wellness business models that are used to provide value propositions. We identified six key value propositions: *ease of use, opt-out options, gamification of service experience, customization of service experience, customized offerings, and service-sharing possibilities*. Consequently, the data shared by customers of digital wellness businesses have numerous positive outcomes for both service users and the companies themselves. By allowing these businesses to access user data, users receive highly personalized wellness services, such as workout plans and nutrition advice tailored to their individual needs and preferences, enhancing their overall wellness journey. The seamless integration of social media sharing enables increased motivation and accountability, while fostering a sense of community among wellness enthusiasts (Laranjo et al., 2015). Companies, in turn, benefit from the increased engagement, since it leads to greater customer loyalty and retention (Verhoef et al., 2010). Furthermore, the collected data help businesses to continually innovate, stay ahead of industry trends, and meet the evolving needs of their user base (cf. Saura et al., 2021).

Ultimately, responsible sharing of user data within digital wellness businesses leads to more enjoyable and effective digital wellness experiences, benefiting both users and the companies that provide the services. However, we argue that the value propositions can be problematic in relation to privacy issues if they are not dealt with properly. Some, such as personalized recommendations, may be seen as relatively unproblematic, while others, such as the selling of user data to third-party data brokers, raise significant ethical concerns. As previous studies have shown, fully identifiable data that is shared and profited from is problematic in cases of misuse or exploitation by unscrupulous entities (Bonazzi et al., 2010). For example, insurance companies may use health data to deny coverage, while employers may use it to discriminate against potential employees.

Even though customers may have the option to opt out of sharing sensitive data, they may not read the fine print of the user agreements and will consequently be unaware of potential concerns (Martinez-Martin & Kreitmair, 2018). This is particularly problematic given the analytic approach needed to realize the connection between data sharing and how the business profits from the user data. Thus, businesses risk violating consumer privacy when performing unwanted marketing, highly targeted advertisements, and online tracking. On one hand, data collection is necessary for businesses to provide attractive value propositions, such as seamless and personalized service experiences, customized offerings, and targeted

advertising. On the other hand, companies must take privacy regulations and ethical considerations into account.

In this context, we draw on the concept of information fiduciaries (Balkin, 2015) to argue that businesses have a responsibility to act in the best interests of their customers when it comes to the handling of personal data. This goes beyond mere compliance with existing privacy regulations and requires businesses to consider the potential impact of their actions on individual privacy and autonomy. Businesses must act as trustworthy stewards of the data entrusted to them, using them only for legitimate purposes and in ways that respect the autonomy and privacy of their customers. In the study, we noted that some of the user agreements for digital wellness businesses were difficult to navigate and did not provide clear information on how user data will be collected and used. This may lead to users distrusting the service provider, a situation that may not always be warranted. The burden should not be on the individual customer to wade through dense legal documents to understand how their data will be used. Instead, businesses should strive to make their privacy policies transparent and easily accessible, providing clear information about what data will be collected, how it will be used, and who it will be shared with. In the same vein, notice and choice, the traditional tools of privacy regulation may not be adequate for protecting privacy in the digital age (Solove, 2012). Therefore, we argue that the complexity of privacy agreements and the trust-based relationship between the service provider and the individual customer pose significant challenges to ensuring informed consent and protecting privacy rights. This may be particularly important in the context of digital wellness services since the data collected can often be sensitive (for example, self-reported weight, mood, or other health markers).

In light of these concerns, we point to the importance of policymakers and regulators ensuring regulations related to privacy concerns being handled in the context of digital wellness service consumption. This could include stricter regulations and recommendations on how privacy policies are formulated and presented on the platforms and applications, such as clearer and more accessible user agreements, greater transparency around data collection and use, and more alternative business models that do not rely on the sale or sharing of user data. By taking these steps, we can create a more robust and trustworthy digital wellness ecosystem that respects the privacy and autonomy of individual users while still delivering valuable services; that is, digital wellness business models that balance value propositions with consumer privacy.

Ultimately, we argue that the value propositions offered by digital wellness businesses should be evaluated not just in terms of their potential benefits for individual customers, but also in terms of their broader societal implications. By taking a more holistic approach to privacy and data protection, we can ensure that the benefits of digital wellness are enjoyed by all, without sacrificing individual privacy and autonomy. This requires a shift away from the current focus on individual choice and toward a more collective vision of privacy and data protection that recognizes the importance of protecting the privacy rights of all users, not just those with the resources and expertise to navigate complex privacy policies.

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Service Innovation in the Eyes of Customers: The Swedish Innovation Index

11

Joanna Pilawa, Lars Witell, and Per Kristensson

Abstract

The growing importance of service has brought greater opportunities for service innovations to influence the market and improve both customers' and firms' situations. Despite efforts by firms to develop service innovations, they often fail to introduce new services on the market. Ultimately, customers are the ones to assess, buy, and use a new service. That is why the Swedish Innovation Index was introduced as a customer-centric perspective on service innovation, which measures firms based on customers' perceptions of their innovations. This allows firms to predict the future adoption of new services and the relative attractiveness of the firms. The Swedish Innovation Index provides a new perspective that is independent of the firm-centric view of innovation. It opens avenues for both managers and academics to observe, predict, and better utilize the potential of service innovations.

Key Takeaways

- What a firm views as innovative might not be innovative in the eyes of the customer.
- Knowing customers' judgment of service innovation may help prevent service innovation failure.
- The Swedish Innovation Index allows for benchmarking between firms on service innovativeness, its drivers, and outcomes.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_11

Introduction

Service innovation is central to the development of business and society and has been brought forward by the Swedish Government as a strategy to create jobs, prosperity, and increased well-being. Sweden is often ranked as one of the most innovative countries in the world (Dutta et al., 2022) and is known for having innovative manufacturers, such as Ericsson, Bofors, Volvo, and SKF, that have invented breakthrough products. As in most developed economies, Sweden's service share of the Gross Domestic Product (GDP) is approximately 80 percent, and most citizens are employed in the service sector. Service innovations facilitate the growth of service firms, manufacturers, and firms that embrace a customer-centric lens to their operations. Service innovations have replaced product innovations as an engine for increasing employment and represent a broader, more holistic, mindset on how firms can serve their customers and offer value-creating experiences. Every day, citizens use service innovations from firms such as Netflix or IKEA that offer unique customer experiences (Snyder et al., 2016). Combining furniture shopping with having dinner may sound like an odd combination but is a regular activity for many IKEA customers. It is hardly possible to imagine a day of everyday life without hedonic services, such as music streaming, restaurants, and coffee shops, and more utilitarian services such as electricity and banking.

Service innovation pushes the boundaries of many industrial sectors and even creates new markets (Berry et al., 2006). For example, Espresso House has introduced a coffee subscription where customers can subscribe to get unlimited access to any type of beverage offered on the menu. Car-sharing companies are increasing their market share to the point where car sharing could become more popular than ownership. In general, owning products through buying them can be replaced by subscription or sharing services. This suggests that firms apply principles of service management as a basis for developing new services that are replacing product sales. But how do we know if a service innovation is truly innovative?

Traditionally, most rankings of the innovativeness of countries, sectors, and firms are based on patents or R&D investments (Dutta et al., 2022). At the national level, the evaluation of innovativeness typically relies on indicators that are easy to measure (for example, the number of patents), such as the Global Innovation Index or the Bloomberg Innovation Index. An alternative way to measure innovativeness is through self-reports by managers or experts, such as the Community Innovation Survey. These rankings have been criticized for not capturing innovation activities that relate to customer co-creation or are not based on new technology, since such innovations are not often represented in a patent. The Swedish Innovation Index (SII) was recently introduced to overcome these challenges. The SII can evaluate the innovativeness of firms in different service sectors and track what kind of innovations influence customers the most. Such a ranking has an advantage in that it allows firms to benchmark against each other. However, what is really striking is that the Swedish Innovation Index is based on that a new service is an innovation first if consumers perceive the benefits of a new service.

Taking a customer perspective on innovativeness reveals new types of service innovations and what makes customers view a firm as innovative. The customer perspective relies on external input from customers on the efforts of a firm. However, taking a customer perspective on service innovativeness does not solve all the problems with measuring innovativeness. For example, would a customer observe a change in the accounting system or an optimized process of food preparation in a restaurant? Probably not, as those examples occur behind the line of visibility (Witell et al., 2022). This means that although the SII provides a nuanced view of innovation, there are still innovations that cannot be captured by either the traditional measures (which rely on technological advancements and patents) or the new SII (which relies on customer experience). However, by using multiple measures of innovativeness from different perspectives, we can help firms to better understand how to develop their business through different kinds of innovations.

This chapter discusses what service innovation is and how to view innovativeness from a customer perspective. It draws on the experiences from measuring, using, and tracking firms through the SII. It further considers what it means to capture a customer perspective instead of a firm perspective on service innovations and innovativeness. The chapter ends by describing what academia and firms can learn from the SII.

What Is Service Innovation?

Service innovation was introduced in the 1980s and has become a key concept in service research. Schumpeter (1934) argued that an economy develops through developing and introducing innovations. He made a distinction between invention and innovation and argued that innovation is an activity through which inventions are introduced on the market through commercialization. Thus, for an invention to become an innovation it must be introduced to a market and adopted by users. In today's economy, generating financial results and profit is not a good measure of success for an innovation (at least not in the short term), since many innovations are introduced on the market and firms focus on growth rather than profit. Some of the services that we now view as innovations, such as Spotify and ChatGPT, are still not profitable but they have grown exponentially in a short time. Instead of profits, a common theme is to look at the value captured by service innovations. For example, Toivonen and Tuominen (2009) stated that *"Service innovation is a new service or such a renewal of an existing service which is put into practice, and which provides benefit to the organization that has developed it."* However, the same authors added that the captured value often comes from the added value that the innovation creates for customers. In a further development of the Schumpeterian view of innovation, the focus is on the value created for others rather than only the innovation's developers. This is valid in, for instance, the World Economic Forum's view on economic progress described as the interests of all stakeholders in the economy and society. Similarly, Gustafsson et al. (2020) defined service innovation as *"a new [service]*

process or offering that is put into practice and is adopted by and creates value for one or more stakeholders."

Snyder et al. (2016) argued that service innovation can be defined on an overall level by describing the core characteristics of an innovation, but alternative approaches include dimensions or categories. Based on a Lancasterian view of a service, we can identify multiple characteristics or dimensions of service and any type of change in those dimensions could be viewed as a service innovation (Gallouj & Weinstein, 1997). This means that change and dimensions are two key themes in most definitions of service innovation. Such a multidimensional view of service innovation is prominent in recent service research, which describes service innovations as involving multiple changes to an existing offering. The large range of dimensions suggests that service innovation is becoming a broader concept and that firms can innovate through service in more than one way.

What are the dimensions that can be changed and that result in a service innovation? Den Hertog et al. (2010) considered dimensions that are technical and firm-oriented, such as new revenue models or new business partners. Gallouj and Weinstein (1997) were more customer-oriented, considering dimensions such as customers' competencies or their interaction with the firm. This does not mean there are no shared dimensions between different conceptualizations, but that there are alternative approaches to evaluate the innovativeness of an offering or firm. What is shared between different conceptualizations is the belief that change to one or several dimensions will constitute a service innovation.

Service Innovation: From the Firm or Customer Perspective

The literature on innovation management or product development rarely questions that the ones assessing innovativeness, an innovation's performance, or business potential are the firms introducing it or some sort of third-party expert. In practice, those experts are often the CEO, R&D manager, or financial manager from the firm introducing the new offering. This means that, from a firm perspective, innovativeness is based on technology, unique features, how much change has been performed, and how new the product or service is. In this literature stream, managers are often also asked to assess how innovation is viewed by customers, whether the used technology is new or features are unique for them (cf. Ali et al., 1995). While relying on firms and managers to evaluate innovativeness is not wrong, and can provide plenty of insights, it is not always the best choice. As an example, a manager has a bias to evaluate his or her new product or service as more innovative than it is, since that would improve the perception of the product, brand, and firm. Such evaluations are subjective and biased toward any offering being viewed as more innovative than it actually is.

One of the reasons why many new services fail is that there is a mismatch between the perceptions of the firms and customer perspective regarding the innovativeness of new offerings (Zolfagharian & Paswan, 2009). An innovation based on new technology does not, by definition, imply that a customer wants to buy the

new product or service. For example, Apple's introduction of Newton was based on new technology, but customers did not adopt it to the extent necessary for it to become a successful innovation. When the iPad was introduced several years later, it was also based on new technology, but it was also able to create value in use in the daily life of customers. Therefore, applying an inside-out approach to innovations will provide a focus on technological features. However, since the buyer and user of service innovations is a customer, technological excellence is not sufficient for customer adoption. Steve Jobs once stated that Apple's innovation efforts should not start with the technology, but rather from the customer, and R&D should then work back to the technology from those insights.

As a remedy for the many innovation failures, an outside-in approach to the innovativeness of firms has been advocated (Kurtmollaiev et al., 2022). Here, customers are the judges of the innovativeness of new offerings as they are the ones experiencing any new value creation that takes place, which suggests focusing on customers' subjective perceptions of service innovations with reference to their expectations and needs. Imagine a clothes retailer who has a phone app available and decides to fully change the backend of the app to make it more reliable and easily operated, which generates savings for the firm in the long run. This change can be viewed as an innovation, and it is beneficial for the firm, but only in a passive way: it limits costs for the firm but does not increase sales. However, if customers do not perceive the value, they might change to a new clothing provider that better serves their interests and needs. That is why it is important not only to focus on innovations that are of interest to the firm, but also on those that are visible to customers. Customers will evaluate service innovations on what value the new offering brings to them. Using a customer perspective can provide firms with a new perspective on what innovations are and what new products and services are truly innovative.

Customers do not care about a new offering unless it has value for them. Customers will experience any changes in a new offering and will make their own perception of whether it is innovative or not. Based on their perception of a new innovation, a customer will also evaluate the innovativeness of the organization implementing it; that is, the customer will evaluate the organization's ability to develop valuable service innovations (Pilawa et al., 2022). Table 11.1 provides an overview of a firm and customer perspective on service innovation.

A Service Innovation Index: Capturing the Customer Perspective

To use an external perspective on service innovation, Wallin-Andreassen, Lervik-Olsen, and Kurtmollaiev developed the Norwegian Innovation Index (Lervik-Olson et al., 2017). Based on the idea that the customers' adoption and use has the most influence on the success of new products and services, those authors developed a novel, outside-in, and bottom-up approach to evaluating service innovation efforts; namely, the Norwegian Innovation Index (NII) ("Norsk innovasjonsindeks," n.d.). It is a theoretically derived measurement instrument that rests on two assumptions: (1)

Table 11.1 Firm vs. customer perspective on service innovation and innovativeness

Perspective	Firm	Customer
Definition of service innovation	"A new service or such a renewal of an existing service which is put into practice, and which provides benefit to the organization that has developed it." (Toivonen & Tuominen, 2009)	"A new [service] process or offering that is put into practice and is adopted by and creates value for one or more stakeholders." (Gustafsson et al., 2020)
Definition of innovativeness	"The extent or degree of differences and novelties built into the dimensions of intangible service offerings or the degree to which innovated, marketable service products are new to the firm or market." (Akgün et al., 2016, p. 104)	"The consumer's evaluation of the extent to which the dimensions of a service offering meaningfully differ from those of alternatives, real or imagined." (Zolfagharian & Paswan, 2009, p. 156)
Description	Managers of the firm are the judges of the innovation	Customers are the judges of the innovation
Key references	Ettlie and Kubarek (2008) and Toivonen and Tuominen (2009)	Pilawa et al. (2022) and Kurtmollaiev et al. (2022)
Benefits	Has the technological knowledge needed to evaluate technological newness Confronts change with organizations norms and capabilities	Reflects consumer experience A measure of adoption, and success of innovations
Drawbacks	Does not allow judging of possible adoption and users' attitude toward innovation Misinterpretations of what customers need Can be biased toward viewing its own new offerings as more innovative than they are	Omits innovations below the visibility line. Have limited information Biased toward what is valuable for the customer

that it is firms that are innovative, and (2) that customers are the final judges of innovations. Based on these central ideas of the NII, similar innovation indices have spread to the United States, Sweden, Finland, Denmark, Belgium, and Spain.

Theoretical Model

The theoretical model of innovativeness is based on that customers experience different dimensions of service innovation. This means that customers experience how a service has changed, and these changes can be attributed to changes in different dimensions of the service. How these changes are viewed influences the innovativeness of the firm and, ultimately, its relative attractiveness. By considering dimensions that allow the customer to perceive innovations, it is linked to the service innovativeness of a service firm and its relative attractiveness.

What customers can recognize as service innovations are the changes in several service dimensions: interaction space, value proposition, value actualization, and relationship experience (Pilawa et al., 2022; Lervik-Olson et al., 2017).

- **Interaction space** is the dimension in which the service is performed. Customers have the ability to perceive changes in both the physical and online aspects of the servicescape. Visual aspects and also the utilities of the servicescape are easily observable to customers.
- The **value proposition** is what the customer buys or uses. Customers can observe changes in the products and services of the firm. Service provision is often based on services connected with tangible products, such as with retailers or coffee shops; thus, both tangible and intangible aspects of the offering can be the target of innovation.
- The **value actualization** dimension concerns how the service is provided. A service innovation could be the introduction of a novel service delivery mechanism, such as self-service. This dimension covers technological and organizational changes in the delivery of offerings. A change in the delivery dimension may not always be visible to customers, but this dimension covers only the changes in service delivery that are observable to customers.
- The **relationship experience** dimension refers to the service encounter. It may be a person-to-person encounter, an online interaction, or interactions at other touchpoints. This dimension accounts for the customer's role in service provision. An innovative change in this dimension often involves changing the role of the customer in service provision.

As the results of the observed changes, customers judge the **service innovativeness** of a given firm. This means that the service firm is perceived as being capable to create valuable and novel services. Why it is important to be viewed as innovative? It is crucial for the differentiation and competitiveness of a firm; simply speaking, a firm is becoming more attractive to customers in relation to its competitors. That is, service innovativeness influences the **relative attractiveness**, which portrays the preference of one service provider in comparison with other available alternatives; see Fig. 11.1.

Operationalization of the Model

To estimate an innovation index, the model of service innovativeness from a customer perspective is operationalized as a path model where each theoretical concept is measured through a number of different questions. All of the different national innovation indices are based on the Norwegian innovation index, with some modifications to fit the different languages and the potential addition of different theoretical concepts. To estimate the innovation index, a survey is conducted among the customers of a firm. For each firm, a considerable number of customers are

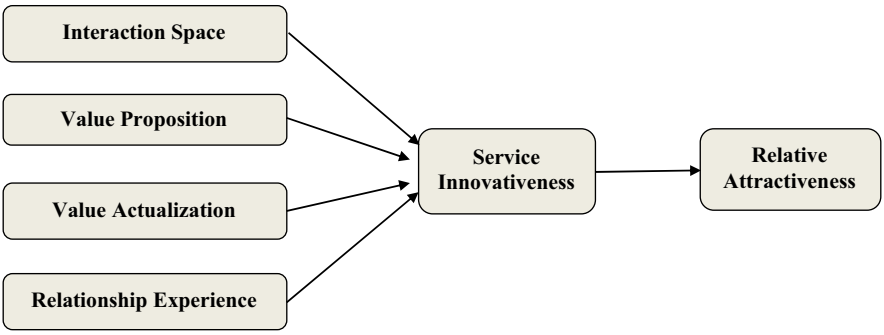

Fig. 11.1 Model of service innovativeness

surveyed each year (200 is a normal benchmark). This facilitates a yearly evaluation of a service innovativeness index. In Sweden, the benchmark is called SII.

The yearly survey mainly measures the constructs included in the model of service innovativeness (see Fig. 11.1). Depending on the interest in investigating important drivers or outcomes of service innovativeness, additional constructs may be included. The scales used for measuring the constructs consist of multiple items measured on a Likert scale. The items used can be found in the methodology report of the NII; see Lervik-Olson et al. (2017) or Pilawa et al. (2022).

Some countries that have measured innovativeness have decided to add additional aspects of service innovativeness to their innovativeness index. For example, a Social Innovation Index was implemented in the USA and in Norway to reflect how customers view firms' innovations to benefit society and the environment ("Norsk innovasjonsindeks," n.d.; "The Social Innovation Index," n.d.). Further, in addition to the Norwegian Innovation Index, the Commercial Innovation Index and Digital Innovation Index were included, measuring how customers see firms' innovations driving the market and their experience with digital innovations, respectively.

Experiences from the SII

The SII is published yearly based on the data gathered from customers on their perceptions of the innovativeness of the largest Swedish service firms. The decision regarding which firms to include is based on where consumers in Sweden spend their income. Thus, the SII includes consumer sectors such as insurance, banks, retail, telecom, and energy services.

The SII includes approximately 90 companies from 12 different service sectors. Each year, the most innovative service firms are identified and presented at a conference. We can identify the most innovative firms, the most innovative service sector, the firm that has improved their innovativeness most, and the firm that has reduced their innovative performance most. The results of the SII show that although firms like IKEA and Spotify sit relatively high on the list, this does not mean their

respective service sectors (retail and online services, respectively) are ranked as the most innovative sectors. Most of the top five innovative firms do not come from the same service sector.

Figure 11.2 represents the innovativeness of different service sectors in 2022, revealing that online services are viewed as the most innovative service sector. In addition, energy services are viewed as the least innovative sector. Energy firms have not been able to solve the energy crisis through new services. They have failed to provide the basics: cheap and reliable provision of energy to consumers. Although many of the problems are outside the control of the energy provider, such providers are evaluated as less innovative since they have not been able to solve the most critical issues that are important for consumers.

A key issue is in what dimensions changes have the greatest influence on perceived service innovativeness. While changes in all dimensions of service innovativeness are important, some may influence service innovativeness more than others. A meta-analysis of the results from the Swedish Innovation Index reveals that the innovativeness of firms is mainly driven by changes in the value proposition and the interaction space. While all dimensions influence the innovativeness of firms, some dimensions are more important than others. In addition, what dimensions are most important are different for different firms. As a guide for firms that want to be viewed as innovative, implementing changes in the value proposition and interaction space should be the most successful strategy that gives the best results (see Fig. 11.3).

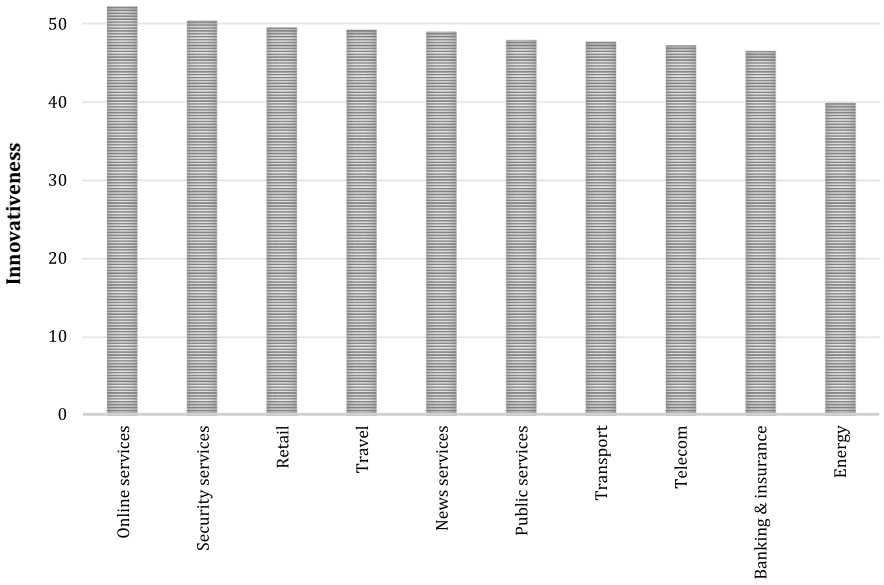

Fig. 11.2 Comparison of service innovativeness between different service sectors (data from 2022)

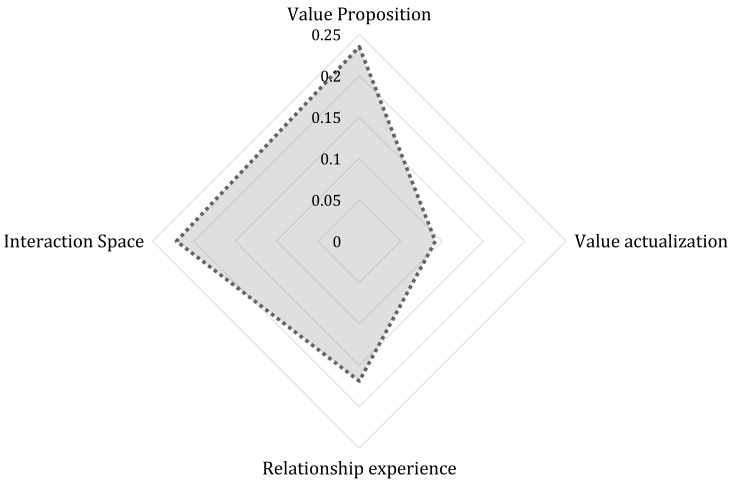

Fig. 11.3 The influence of different dimensions on service innovativeness

Comparing the results of the SII with similar indices from countries such as Norway and the USA can show whether innovativeness is viewed similarly across countries. However, a direct comparison is difficult since not all sectors and firms are represented in each country. In the first year that service innovativeness was measured, IKEA was the most innovative in the Norwegian Innovation Index, the American Innovation Index, and the Swedish Innovation Index. The results of other firms also show consistent results; for example, Netflix has high results in all countries. Such consistencies show that some firms are innovative for customers across different markets and countries and know where to target their innovative effort toward changes in different dimensions of the service. Such results also increase the trust that the innovation indices work well and that the results have a diagnostic ability on the innovativeness of service firms.

In a study of the SII in retail firms, Pilawa et al. (2022) focused on imposed service innovations during the COVID-19 pandemic. An imposed service innovation is a change in a service that has its origin in an external source that is beyond the control of the firm. It could be a change in legislation, a war, or as in the case of this study a pandemic. Pilawa et al. (2022) showed that changes in the interaction space were the key driver of service innovativeness during the COVID-19 pandemic. Retailers who had developed their online servicescape were viewed as more innovative. Second, perceived COVID-imposed innovations partially mediated the relationship between service innovativeness and the relative attractiveness of retailers. As expected, this mediation only holds for physical retailers and not for online retailers, which validates the boundary condition of the effect. This basically means that innovative firms have a higher ability to handle situations where they are forced by external conditions to change their services or business. The key managerial implication was that the pandemic has changed how customers view online

innovations in retailing, so the e-servicescape has become essential for improving the relative attractiveness of retailers, especially for physical retailers.

Conclusions

The Swedish Innovation Index shows how customers perceive firms and their innovations. This understanding of how customers view the innovativeness of firms is strategically important for decision makers, as a firm's survival depends on how it is perceived by customers (Kurtmollaiev et al., 2022). Moreover, viewing service innovations from a customers' perspective shows the value of being able to change perspective or use multiple perspectives on the innovativeness of firms.

While the SII is relatively new, it has already shown that it has value for firms and is of interest for media and policy makers. By observing innovativeness over time, one can track the results of investments in innovations and even get an indication of the future success of new services. Analysis can also be performed on different levels, such as firm, industry, or even country. It allows firms to track their performance and evaluate how they are performing in relation to their competitors. Being viewed as the most innovative firm in a sector suggests that the firm is the innovation leader; that is, it sets the rules of the game on the market.

The SII and the way can capture customer perceptions of innovativeness makes rich in insights. However, there is much we do not know regarding how it also opens new avenues for research. It would be valuable to compare the customer perspective with a managerial perspective on innovativeness; that is, to compare the SII with the firms' own evaluations of those innovations. Researchers could consider whether the position in a given year has an impact on the next year's rank in the SII, and whether and how strong a reputation of being innovative has an influence on revenue growth and profits.

Managerial Implications

The SII shows customer perception of firms and their innovative effort, which is often very different from their own assessment. Thus, managers can use customers' perspectives to contrast them with the firm's internal assessment in order to obtain the most accurate information to evaluate whether the firm is developing the correct new services. Moreover, the SII allows firms to benchmark and see their position in relation to their competitors regarding innovativeness. Furthermore, analyzing innovativeness over time can help firms look back at what went wrong and predict how adoption and sales will develop moving forward.

For policymakers, measurements like the SII can show how one sector is developing in relation to other sectors. Especially in sectors where R&D investments are low, it provides an overview of what type of innovations, how much, and how quickly a sector is changing. Since most citizens are employed in the service sector, the SII is more important since it tracks the development regarding future

employment. The SII can indicate customers' future needs as well as the competencies needed to get a job in a certain industry.

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B2B Service Innovation: How Business Customers Perceive Firm Innovativeness

12

Javaneh Mehran and Per Kristensson

Abstract

Both academia and industry unanimously agree on the pivotal role of innovation in driving sustainable economic growth. Business-to-Business (B2B) services constitute a substantial portion of the global economy. The relative magnitude of the B2B market, in comparison with the Business-to-Consumer (B2C) market, is larger in terms of revenues, profits, assets, and overall value. Primarily, innovation in B2B service research has predominantly centered around knowledge and technology within the manufacturing industry, where the commercialization of ideas, in the form of new product development, is deemed as innovation. More precisely, B2B innovations have undergone analysis and discussion across various dimensions and categories, often with a primary focus on the core product. Generally, a firm-centric perspective has prevailed in defining innovation, while the manner in which customers perceive a firm's innovativeness has been understated. The objective of this chapter is to propose a framework for categorizing B2B innovation features into six distinct types. By introducing the notion of an innovation dimension continuum, we elucidate how varying degrees of basic, advanced, and ecosystem integration solutions impact business customers' perception of a firm's innovativeness.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_12

Key Takeaways

- In B2B services, customers illustrate the nuanced and fuzzy concept of innovation in an ascending order based on the degree to which they need to allocate resources to realize the co-created value for enhancing their competitiveness.
- B2B customers perceive firm innovativeness as the level at which innovative features contribute to their firm's competitive advantage.
- The continuum of innovation dimensions encompasses three facets of innovation, namely cost-saving resources, enhanced skills, and ultimately, improved dynamic capabilities. These dimensions influence customer perceptions of the supplier's firm innovativeness in an increasing order.

Introduction

Globalized competition has led to innovation becoming a competitive strategy for businesses aiming to target both existing and new customers. Innovations have the potential to enable suppliers in meeting the evolving needs of their business customers. As a consequence, the development of new services holds significant importance for business firms. The perspective on innovation, previously centered around firms, has placed substantial emphasis on aspects like R&D investment and technological capabilities in product and process development (Lievens & Blažević, 2021). However, concerning service innovation, the focus has shifted toward collaborative efforts with customers, primarily aimed at creating solutions that enhance service delivery; this mirrors the synthesis perspectives of innovation (Gustafsson et al., 2020). For instance, joint projects involving co-production and innovations in business models have emerged as pivotal features of innovativeness within this body of literature (Biemans & Griffin, 2018). The range of innovation endeavors practiced by service organizations, encompassing service infusion, the transition to service-oriented manufacturing, the enhancement of value propositions, the adoption of novel business models, and the application of technologies, have collectively contributed to the growth of both business suppliers and their customers, enhancing their competitive standing within the market (Dayan & Ndubisi, 2020). The discourse concerning consumer perceptions of innovation is expanding as an increasing number of national indices are being developed to gauge customer perceptions of firms' innovativeness from a consumer standpoint (Kurtmollaiev et al., 2022; Pilawa et al., 2022). It is imperative for companies to consistently devise new service solutions to outpace competition and cater to the evolving needs of their customers. According to Forbes, 90 percent of B2B companies prioritize customer experience in their organizational strategies to address buyer requirements through innovative solutions; however, which dimensions and scales can elucidate customers' expectations of innovative solutions?

Within this chapter, we shift from an introspective view of innovation confined within firms to a customer-centric perspective, exploring how customers perceive diverse value-co-creation offerings from B2B suppliers. By introducing new

innovation dimensions tailored to B2B services, we demonstrate how varying levels of basic, advanced, and ecosystem solutions can enhance perceptions of firm innovativeness.

Different Glasses on the Definition of B2B Innovation: From Industrial to Service Perspective

In B2B literature, innovation has primarily been classified based on the type of output, i.e., either a service or a physical good, the nature of collaboration with partners (such as customers, suppliers, competitors, and/or technological centers), and knowledge along with jurisdictional control (Biemans & Griffin, 2018; Malhotra & Morris, 2009; Ojha et al., 2021). B2B innovation has been explored at the product level, firm level, and customer level. However, the focus of research has predominantly been on product and firm-level innovation, with less attention given to the customer level.

Traditional perspectives on innovation adopt a Schumpeterian viewpoint, depicting innovation as an outcome of an innovation process. Reflecting this perspective in a service context, three dimensions of innovation output pertain to what is being renewed (such as the service concept, service process, and service resources/infrastructure), the nature of the renewal (which involves improvements or additions to service components), and the radicalness of the renewal (measuring the degree of difference or dissimilarity of the new service).

The Lancasterian view of innovation argues that continuous changes in several dimensions of an existing service solution contribute to innovation. For example, Den Hertog et al. (2010) argued that firms could manage service innovation with change in any of the six dimensions of the service concept, customer interaction, business partners, revenue models, new delivery system, and delivery of the technological system.

In addition, the firm view of innovation has been studied using a knowledge-based view, resource-based view, and dynamic capabilities view. The knowledge-based view (KBV) main idea of firms' superior performance regards the intangible knowledge assets as the antecedent to firm innovativeness (Cooper et al., 2023). According to KBV, business firms co-create value with their business customer in the form of operational and professional services (Cheng et al., 2017). Operational services (e.g., manufacturing suppliers) create exclusive custom-made solutions in order for a business to overcome customer problems. Operational services can be compared to professional services which provide customized solutions in the form of new knowledge and offer new services to fulfill customers' communicated and uncommunicated needs (Cheng et al., 2017; Von Nordenflycht, 2010). Operational services are more problem-solving in their nature, while professional services address business customers' demands with innovative solutions (Holmberg & Ida, 2013). The resource-based view (RBV) emphasizes the combination of valuable, rare, inimitable, and non-substitutable resources to create competitive advantage as specific organizational abilities. RBV studies how the integration of resources (e.g.,

supply chain) contributes to competitiveness and facilitates innovation for business partners (Gupta & Malhotra, 2013). For example, information system competencies affect process innovation in an organization (Tarafdar & Gordon, 2007).

On the other hand, the dynamic capabilities view (DCV) focuses more on the issue of sustained competitive advantage in response to ever-changing contemporary business opportunities. In the manufacturing context, the literature discusses how to build organizational capabilities by re-configuring existing business models to manage the situation with optimum usage of resources (i.e., time and cost). For example, developing innovative digital solutions (e.g., AI and big data technical analysis) influence B2B marketing activities to sense and seize emerging business opportunities (Mikalef et al., 2021). In summary, the B2B literature applies KBV, RBV, and KBV theories to contribute to the firm capabilities of innovativeness, customer experience of innovation is less investigated.

According to the service-dominant logic (S-D), innovation is defined as changing value as perceived and experienced by the customer, thus deviating from the idea that value arises in production or in the exchange. Service-dominant logic focuses on the processes of serving rather than on the output and therefore innovation reflects as a process of offering service solution that is centered on network, information, and experience. This perspective reflects the use of resources, knowledge, and skills competencies being processed, implemented, and transacted for the benefit of stakeholders during the process. In B2B organizations, firms embed knowledge in their final solutions that the customer later can combine with their own skills to realize the final value (Michel et al., 2008). Accordingly, operand resources are often tangible and static (e.g., natural resources), while operant resources are often intangible, dynamic, and more pivotal (e.g., human skill), therefore a source of sustained competitive advantage.

According to Lusch and Nambisan (2015), innovation in business firms mainly focused on physical technologies, platforms, and equipment, while innovation in B2B services is dedicated to knowledge of human resources and the application of novel technology in which innovation and service are interlinked (Lusch & Nambisan, 2015). For example, businesses can benefit from the servitization of manufacturing businesses and the application of big data analytics to create value through dynamic and human knowledge and skills. Therefore, those innovation sources are difficult to transfer or imitate (Dayan & Ndubisi, 2020).

In manufacturing services, novel techniques and algorithms in configurations are mobilizations of contextually relevant knowledge in the most effective and efficient way. Speediness in offering innovative service solutions and flexibility during the operation are significant to integrate and transform business resources (Ojha et al., 2021). The ability to liquefy information resources has mounted to central prominence in B2B due to the fact that with the emergence of the digital revolution and internet-based business models, many information resources have the potential of being liquefied. The emergence of customer centricity in B2B has been addressed by the value co-creation perspective of innovation in the service context. In comparison with the densification of recourses in service platforms, a value co-creation mindset has been applied to business organizations to integrate their resources to

exceed customer expectations. B2B service firms have been considered from both firm perspective in value offering (O'Cass & Sok, 2013) and customer perspective as users of value and multi-stage process of value co-creation including both firms and customers. The value co-creation perspective has reflected in B2B innovation in co-producing service offers, where joint innovation project accelerates the process of value co-creation. Innovation ecosystems shifted the focus from competition to collaboration. An *innovation ecosystem* is the evolving set of "actors, activities, and artifacts, and the institutions and relations" that contribute to the innovative performance of an actor or a set of actors (Granstrand & Holgersson, 2020). In B2B ecosystem innovation literature, knowledge production—as a system resource—for the application of specific technology has significantly emerged in the technological innovation system. Allocation of financial and human capital facilitates timing and co-produce service offering (e.g., resource assembly in software-as-a-service).

Empirical Study

To address the gap in customers' perception of innovativeness, we conducted in-depth interviews with six Swedish B2B firms that offer and receive professional services. Through these interviews, we identified six types of innovative features that companies prioritize to enhance customer benefits. The interviews primarily focused on determining which types of innovation efforts were most valuable from the customers' perspective. Additionally, these interviews delved into customer perceptions of innovation and identified the specific customer segments that derive greater advantages from these innovations. The results enabled us to pinpoint six categories of innovativeness features recognized by business customers. However, it is important to note that the innovation endeavors invested by suppliers in logistics, supply chain management, research and development, and technological enhancements or process automation, while beneficial for their own organizational innovation capabilities, do not inherently impact the buyers' perception of innovation. Drawing from this observation, we put forward a conceptual model aimed at elucidating the dynamics through which innovation efforts are perceived.

To address customer perception of supplier's firm innovativeness, recent studies have focused on retail customers' and end-users' perceptions of innovativeness through S-D logic. Accordingly, customer perceptions of innovation measured the outcome of firms' activities that result in changes in the service offering characteristics, delivery processes, and resources (Gustafsson et al., 2020). For example, Pilawa et al. (2022) investigated four dimensions of service innovations (offer, delivery, interaction, service scape) that influence perceptions of innovativeness of Swedish consumers. Based on the joint sphere value co-creation literature, Kurtmollaiev et al. (2022) suggest that firms proposing new value to customers change how consumers actualize value, re-configuring relationships with firms, and redesign space interaction. Overall, this affects perceptions of how consumers perceive what is being innovative. Recent studies have reflected on the extent of firms'

efforts of maintaining an image of innovativeness (Gustafsson et al., 2020). For instance, the innovativeness of American and European B2B industries was measured in terms of their technological innovation communication (Goffin et al., 2021). Innovativeness as an outcome of service innovation features at the firm level was mainly measured through innovation adoption, organizational agility, and organizational capability. Inter-firm level of innovativeness was dignified by outcome synergies in partner collaboration and R&D quality. Business customers' perception of firm innovativeness was studied through variables such as trust, commitment, satisfaction, and adaptation of buyer's behavior. They showed that pricing strategies, the cost of the service solution, associated risk, and the reputation of suppliers has a significant impact on buyers' innovation adoption behavior (Nyadzayo et al., 2022).

How Customers of Business Companies Perceive Innovativeness

In this chapter, we developed and explained an indicator of innovation level and innovation dimension continuum that collectively play a pivotal role in shaping and influencing the perception of innovativeness among B2B customers. Hill (2000) introduced the criteria of "order winners" and "order qualifiers." The terms refer to which processes firms convert their operational capabilities to competitive advantage for customers. This framework is well in line with a customer-centric approach. An order qualifier is the set of minimum criteria that a firm need to offer a customer to be relevant and included into the considerations. An order winner then is the set of criteria that differentiate market offers and results in customers choosing this particular firm instead of competitors (Hill, 2000). Literature in strategic and operations management have tried to understand which competitive capabilities could differentiate order qualifier from order winners and thus are perceived as most relevant in different industries. For example, early research in operation management found quality, price, service delivery reliability, and diversification of offerings as order qualifiers and innovation as the competitive dimension in order winners. In another study, Holmberg and Ida (2013) argued that customers turn to knowledge-intensive business services (KIBS) (e.g., consultancy SMEs) to improve their knowledge and skills were order qualifiers. Whereas the criteria to win the market were meeting customer needs, brand reputation, relationship with customers, interaction platforms and activity as well as innovation. Afterward, Hill and Hill (2017) elaborated their ideas on mixed markets in which market demand constitutes an important criterion for both order qualifier and order winner. For example, in price-competitive markets, price is a natural qualifier and when a company competes on price to reduce cost, price becomes an order winner. Tested the qualifier-winner logic in the service context and argued that basic service attracts customers by creating additional value as an order qualifier and advanced services are order qualifiers. Based on service innovation literature, customers use their time, cost, and knowledge resources and take advantage of offered densified resources to create value for

themselves (Michel et al., 2008). Therefore, they perceive the continuum of value creation as the extent they become more competitive in their market and ultimately improved dynamic capability. We reflect on our findings based on the concepts of order-qualifier-order-winner and value co-creation. We conceptualized three innovation illustrations in ascending order, including basic service solutions, advanced solutions, and ecosystem resource integration (see axis *Y* in Fig. 12.1).

Basic service solutions are offerings in which customers need to contribute their own valuable resources and skills to co-create the competitive advantage they are seeking. These solutions enable customers to co-create value indirectly and in a variety of ways according to their personalized needs. For example, in developed countries like Sweden, leading service firms (e.g., premium brands) exert more effort in optimizing resources and adding value in transportation/logistics, R&D, and process automation to enhance their innovation capability and competitiveness in the market. However, our interviews reveal that customers perceive these firms as less innovative. This perception mainly stems from the fact that customers must invest their own resources into the process to realize the value and gain a competitive advantage.

Advanced service solutions represent the next level of perceived innovativeness and encompass offers that have successfully integrated operant and operand resources while clearly communicating how the offering contributes to enhanced competitiveness for the customer. Our interviews indicate that customers perceive advanced solutions as opportunities to achieve their goals more easily. In other words, customers view advanced solutions as more innovative. For instance, the integration of digital technologies and knowledge and the utilization of big data to rapidly identify customer needs serve as two examples of advanced innovative solutions.

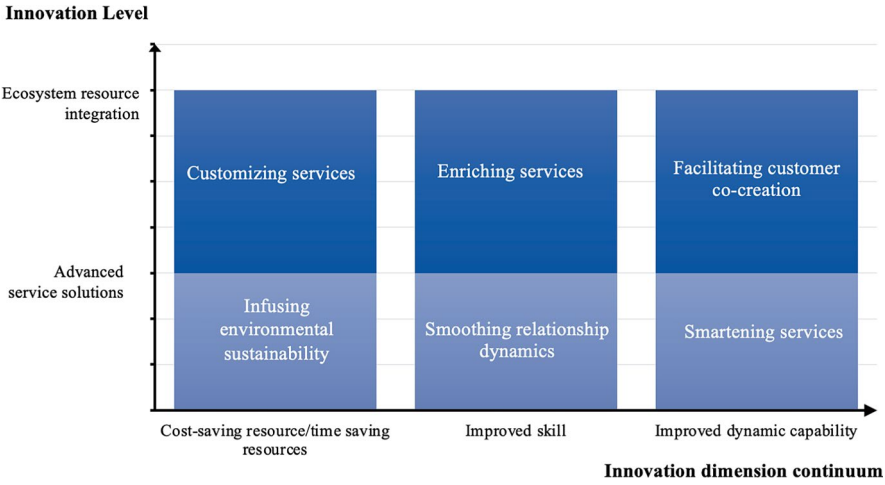

Fig. 12.1 The ascending level of perceived firm innovativeness

Ecosystem resource integration refers to solutions that have maximized the incorporation of resources from all potential actors, including suppliers, buyers, and other partners within an ecosystem, all for the exclusive benefit of the customer. Consequently, customers perceive these offerings as the most innovative. For instance, co-developing service offerings in B2B collaborative projects that minimize human errors (downtime), energy waste, and time consumption for customers are examples that necessitate collaboration among a multitude of partners. As a result, these solutions are perceived as innovative.

The innovation continuum can be visualized as a spectrum comprising a series of interconnected stages. Different activities and approaches to innovation are positioned along this continuum. Drawing from insights in the literature on service innovation and strategic management, researchers have explored the assessment and perception of innovation by customers using various perspectives and approaches. These include, but are not limited to, incremental innovation, disruptive innovation, radical innovation, and open innovation strategies. Each of these strategies influences how innovation is perceived and evaluated within the business landscape. Reflecting on the technology acceptance model and the diffusion innovation theory, business customers may evaluate innovativeness based on their belief in how much the innovation efforts enhance their business processes and how easily they can integrate and use the innovation. Innovation has long been acknowledged as a source of competitive advantage, contributing to the firm's "positional superiority" by providing superior customer value and/or achieving lower associated costs (Amarakoon et al., 2018). Our interview results revealed that business customers perceive suppliers' innovation efforts based on the explicit contribution of those efforts to the competitive advantage of the buyer's firm and ultimately to improved dynamic capability. B2B innovation co-creation occurs when suppliers enhance their innovation capabilities and integrate them with customer resources in the value-creation process. Consequently, customers benefit from the integration of maximum resources, resulting in perceptions of innovation that encompass saving time and cost resources, improved skills, and enhanced dynamic capability, in ascending order. We have conceptualized the Innovation Dimension Continuum based on three dimensions as the foundation for customer perceptions of innovativeness. Our conceptual model suggests that the more changes a customer perceives across the third dimension of the service, the greater the perceived service innovativeness in comparison with the second and first dimensions, respectively. Therefore, this chapter conceptualizes innovation as a change in value co-creation in B2B service relationships, contributing to the competitiveness of both suppliers' and buyers' companies. Consequently, customers' perceived firm innovativeness is evaluated based on the extent of innovation efforts in time/cost-saving resources to enhance their competitive advantage and further efforts that directly contribute to their dynamic capability in the final market (see Asics *X* in Fig. 12.1). The conceptual model in Fig. 12.1 shows how B2B customer categorizes different features of innovativeness into an ascending innovation concept and perceive firm innovativeness.

Customizing Services

Based on the literature, discussions about the change in the value proposition for the B2B market revolve vastly around the degree of valuable customization offered by suppliers to their customers regarding the core product or service. When services are tailored/customized to align with the unique requirements of a customer, they are more likely to yield outcomes directly contributing to the customer's objectives (Goffin et al., 2021). The literature affirms that service customization nurtures a collaborative environment for co-creating value. Business firms engage in value co-creation with specific segments by assimilating and leveraging all available knowledge resources to address gaps in customer knowledge and enhance competitiveness within their ultimate market. In general, customization optimizes the allocation of customer resources. Through the integration of ecosystem resources in the Swedish market, customer perception of the value chain is heightened. The personalized approach ensures that customers receive solutions precisely tailored to address their challenges, an outcome achievable only with additional business investment. By customizing services to closely match customer needs, resources are utilized more efficiently, allowing customers to minimize waste and avoid unnecessary expenditures. For instance, one supplier (S3) expounded, "We consistently tailor our product to a specific market segment over a defined period… Our constant thinking beyond conventional boundaries in providing exclusive customized solutions for various clients has earned us the reputation of being highly innovative in customer surveys." Another supplier (S5) elucidated, "Our customers perceive us as innovative due to our ongoing communication of awareness regarding digital solutions exclusive to their market, aiding them in their digitization efforts." One customer (C1) noted, "We derive benefits from technical solutions (B2B consultancy) that cater to our specific installation needs."

Enriching Services

Innovation in service augmentation results from facilitating and supporting core products to create the potential for increased sales and differentiation from competing offerings (Junarsin, 2010). However, the industrial customer perception of enriching service solutions extends beyond innovation in physical products and processes (e.g., new product development), as communicating the added value of price-sensitive and value-priced sophisticated products is challenging (Goffin et al., 2021). In technology-driven industries with resilient market orientations, where innovation is crucial to maintaining competitiveness, suppliers should communicate their competencies to customers by processing information from them and taking appropriate actions based on that information to enrich the core service (Cheng et al., 2017). The perception of innovation through service enrichment is reinforced when suppliers benefit from ecosystem resource integration and continuously enhance core solutions to address customers' needs, preferences, and pain points. Our discussions with Swedish manufacturing B2B services reveal that the

innovation focus of service enrichment lies in maturing product and mechanical design, contributing to customers' competitiveness by educating them and reducing assembly/production costs (e.g., human errors, energy consumption). For instance, (S2) highlighted that "Energy-efficient updates of product line machines have been perceived as highly innovative and exciting. While the (core) product cost for use in the product line increases, product usage goes down due to high efficiency. Customers view us as innovative when we educate them about improved automation features (enriched solution) that help minimize labor costs, human errors, and energy consumption." On the other hand, B2B resellers in our study focus on providing superior value for simple and affordable products whose benefits in production and assembly are not well understood by business customers. One supplier (S5) explained, "We provide knowledge about the value of products, such as using less material and creating lighter products with reduced energy consumption in production—knowledge the customer lacks. As a reseller, we ensure our customers grasp the real value of receiving something robust and new." Therefore, co-creation of value through enriched solutions helps customers enhance their competitiveness in their target markets by improving skills and saving energy and time.

Facilitating Customer Co-creation of Services

Collaborative innovation represents a promising approach in which companies collaborate with their business customers to devise inventive solutions that ultimately benefit the customers. The facilitation of co-creation platforms in B2B innovation promotes open innovation, enabling companies to harness external expertise and insights from customers, suppliers, and partners. The amalgamation of knowledge from suppliers and partners to implement novel technological solutions and/or enhance personalized service innovations for the customers is referred to as the co-production of service solutions. Facilitating customer co-creation of services within joint innovation projects maximizes the integration of resources from all potential stakeholders, thereby generating superior innovations (Ndubisi et al., 2020). In the context of buyer–supplier relationships, the significance of continuous communication and effective utilization of operational resources can enhance mutual learning (Kim et al., 2018). Consequently, innovation endeavors within such projects facilitate the realized value of knowledge resources. Swedish industrial suppliers are of the opinion that the insights buyers bring from their respective markets (e.g., end-users) during joint innovation projects empower them to anticipate market requirements ahead of competitors. Through cross-organizational learning, business customers can mitigate potential future knowledge risks and resource consumption by enhancing their dynamic capabilities and sustainable competitive advantage in the target market. Theoretically, modifications in the collaborative sphere impact customers' perceptions and experiences of a firm's innovativeness (Kurtmollaiev et al., 2022). Aligning with these theoretical underpinnings, B2B customers hold the belief that the co-produced service offering serves as an integrated resource within the ecosystem, leading to resource savings, skill improvements, and ultimately

bolstering their business's dynamic capabilities in the market. For instance, one supplier (S1) elaborated, "We maintain close collaboration with our customers to identify precisely the optimal (exclusive) solution for their requirements. We engage in joint pilot activities/testing alongside our innovative customers… They view us as innovative when we collectively devise solutions that enhance their innovation within their consumer market… Customers involved in the development of electric machinery seek opportunities for co-creating innovative solutions to enhance environmental efficiency, production efficiency, product success, and risk mitigation of failures."

Infusing Environmental Sustainability

The infusion of environmental sustainability and the adoption of green innovation are closely linked to mitigating environmental pressures and risks. Drawing from B2B literature, service solutions capable of presenting data and metrics regarding emissions reduction, energy savings, or waste minimization can enhance customers' perceived value. Innovations that harness cutting-edge technology to deliver more efficient and effective sustainability solutions are likely to be positively received.

In our industrial B2B project, our partners believed that the innovativeness of service solutions imbued with minimized environmental impact, such as the reduction of greenhouse gas emissions, the conservation of water and energy, or the minimization of waste generation, was greatly valued as innovative solutions. For instance, suppliers offering industrial equipment or infrastructure solutions integrate renewable energy technologies into their offerings. This might encompass the incorporation of solar panels, wind turbines, or other renewable energy sources into the client's facilities to diminish reliance on non-renewable energy sources. Industrial customers are inclined to take interest in services that not only curtail their environmental impact but also provide potential cost savings, heightened operational efficiency, and an enhanced brand image. Our interviews concluded that the integration of environmental sustainability into services represents advanced solutions that are primarily regarded as innovative due to their contribution to the conservation of time and cost-saving resources. Environmental sustainability can also be viewed as a means to mitigate potential risks such as regulatory changes, disruptions in the supply chain, or evolving customer preferences regarding environmental concerns. For example, (S1) confirmed that the electrification solution we proposed to our partner (a vehicle-producing factory) was perceived as innovative; by utilizing fewer resources, they could offer distinct services in the market compared to their competitors.

Smoothing Relationship Dynamics

To strengthen the connection, it is advisable to enrich the value proposition by cultivating seamless communication across the marketing-sales interface. This entails optimizing all individual interactions, touchpoints, and digital channels, as suggested for discerning customer requirements (Geyer et al., 2018). Businesses that maintain an ongoing dialogue with their customers can continuously refine and improve their offerings based on the ever-evolving customer needs, preferences, and emerging trends. However, while B2C enterprises engage in more regular customer interactions, B2B establishments need to harness digital technologies (such as adopting big data solutions) within their innovation networks. This digital integration enables B2B enterprises to better comprehend customer and market needs (Nyadzayo et al., 2022). A testimony from a customer (C2) confirmed that "It would be innovative for us (customers) if suppliers could devise solutions that facilitate easier communication (saving time) whenever we encounter production or sales issues." In the context of industrial service firms, customers co-create more value within open innovation-focused business models, wherein greater customer interaction occurs. By fostering more seamless relationships, suppliers can empower customers in value co-creation, a concept that might not materialize without direct customer input. A supplier (S1) elucidated, "Through industrial internet and remote technologies, we maintain constant contact with our customers." In the context of traditional buying centers within the industrial market, innovations in networking and inter-firm relationships are particularly significant when they lead to time and resource savings for customers. Another supplier (S2) expounded, "We have on-site personnel whom customers can contact, and we commit to on-site assistance within one or two days." In the Swedish market context, an innovative network refers to an advanced solution that significantly enhances customers' skills and subsequently shapes their perception of the firm's innovativeness. In ongoing B2B relationships, customers manifest changes in the value proposition through interactive physical, digital, and cyberspace platforms. These platforms facilitate the co-creation of value for intricate service solutions. For instance, in a radical innovation project's initial stage, suppliers communicate their innovation progress through demonstrations, showrooms, simulations, and innovative websites (Biemans & Griffin, 2018). A supplier (S4) noted, "Customers proximate to end-users benefit from our innovative solutions showcased in our showrooms and workshops."

Smartening Services

Smart services, as defined in the service literature, encompass the fusion of innovative business models with other features to either create novel value propositions or enhance existing service systems (Heinz et al., 2023). Recent technological advancements have paved the way for the enhancement of service offerings, allowing businesses to more efficiently and effectively address their customers' evolving needs. To establish a robust foundation, we delineate the enhancement of services in the

B2B context as the integration of intelligent technologies, such as artificial intelligence (AI), the Internet of Things (IoT), and big data analytics, with existing offerings to optimize processes, improve decision-making, and elevate the overall value proposition for businesses. B2B firms collaborate with their key business customers to co-create value through digital business models and agile software development methods. These contributions enhance the competitiveness of customers by rapidly prototyping their actual needs for future services (Goffin et al., 2021; Rummel et al., 2022). The value-in-use of intelligent service solutions, facilitated by data analytics, depends on the depth of insights into customer preferences, issues, and behavior. These insights guide the re-architecting of the customer value chain. Smart services, by design, undergo periodic updates and improvements, which incorporate customer feedback and technological advancements. This iterative approach is viewed as innovative as it ensures the services remain pertinent and up-to-date. In alignment with existing literature, our interviews with industrial firms illustrated that B2B customers highly value access to data analytics and predictive capabilities that assist them in outpacing their competition. For instance, many smart services encompass predictive maintenance features capable of identifying potential issues before they escalate. This proactive support approach is seen as innovative and valuable, as it reduces downtime and maximizes uptime. Notably, one supplier (S1) mentioned that their customer survey indicated that industrial internet and remote technologies, employed to identify errors in customer production lines, are perceived as the most innovative solution. This service adds value by minimizing downtime, enhancing efficiency, and prolonging equipment lifespan. Another supplier (S2) noted, "We offer software for marketing companies. We invest in technology, but our customers don't directly purchase the technology. We must swiftly anticipate customer needs to provide innovative smart solutions before they're demanded." Hence, the perception of a firm's innovativeness stemming from smart solutions hinges on how promptly customer needs are identified before customers themselves recognize them as issues. Suppliers must collaborate with all stakeholders (e.g., IT partner companies, partner suppliers) to deliver ecosystem resource integration to service buyers. Our findings indicate that Swedish customers view smart services as vital constituents of their digital transformation endeavors. These services enhance efficiency, curtail costs, improve decision-making, and consequently, foster enhanced dynamic capabilities in the market.

Both advanced service solutions and the integration of ecosystem resources are considered key factors for success in the Swedish B2B market. Ecosystem resource integration represents the ultimate form of innovation for customers, allowing them to benefit from the collective knowledge of all relevant actors in the market. Consequently, the literature on innovation within the ecosystem framework and Resource-Based View (RBV) confirms that maximizing integrated resources facilitates the transfer of knowledge and skills among individuals, leading to enhanced competitiveness for all partners (such as suppliers and customers). Our findings indicate that elderly and mature customers derive the greatest advantages from ecosystem resource integration. Generally, premium brand customers with resilient market orientations perceive higher levels of firm innovativeness when they engage

in co-creating value through technology-driven innovations in co-produced service offerings, niche marketing, and business model innovation. In these cases, the exclusive offerings result from the optimal utilization of integrated resources. For instance, one supplier (S2) affirmed that "mass-market retailers and installation companies regard our innovation highly, as we assist them in improving the efficiency and quality of their services across all stages, from production to delivery." Conversely, newcomers to the market and small to medium-sized enterprises (SMEs) benefit the most from advanced solutions, leading to time, cost, and energy savings, along with enhanced skills. As an illustration, one customer (C1) explained, "For us, innovation means reliable and well-defined solutions that suppliers know work. This enables us to enhance our competitiveness through innovation by saving time and reducing energy costs."

According to the innovation literature, specific dimensions of innovation can create more value for customers and significantly influence their perception of a firm's innovativeness. Consequently, initial customer perceptions revolved around the extent to which the supplier's offered solutions aided in reducing human errors, enhancing automation, and minimizing energy consumption to boost competitiveness. Based on the supplier's customer survey, perceptions of firm innovativeness were more favorable for efforts that contributed to improved skills. Customers' highest perceptions were linked to suppliers' innovation initiatives that directly and efficiently added value to the buyer's core competencies and dynamic capabilities. The common thread among highly perceived innovation initiatives was their exclusivity for customers, such as smartening the service and facilitation of co-production. This aligns with the challenge of commoditization faced by European B2B companies, for which innovation is a strategic response.

Discussion

Based on the review of innovation literature and the findings from our interviews, business customers have demonstrated varying levels of innovation, progressing from basic solutions to advanced solutions and ecosystem resource integration. In this context, a basic service solution is viewed as a supplier's ability to address problems, rather than being solely indicative of the supplier's innovativeness. The different forms of innovativeness, as highlighted by diverse customers, are evaluated and perceived based on the value they contribute to enhancing customers' business competitiveness. Our conceptual model for B2B services extends existing literature by elucidating the fuzzy and nuanced nature of innovation and the continuum of innovation dimensions that shape how business customers perceive innovativeness.

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Service Innovation in Healthcare: Service Today Versus Service Tomorrow

13

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Abstract

The growing cost of healthcare services, together with increasing demand, is a major concern for the healthcare sector. Innovation, particularly service innovation, has been put forward as a top priority to address the major challenges of healthcare. But how should a healthcare organization balance the needs of tomorrow through service innovation with the needs of today through high-quality care on a daily basis. What development practices and innovation types need to be implemented to deliver high-quality care, now and in the future? Through combining (a) how to work on service innovation with (b) what creates satisfied patients in healthcare organizations, the current study addresses how to balance quality improvement and service innovation. Our conclusions suggest that there are specific development practices that healthcare organizations need to apply to further develop the care of patients.

Key Takeaways

- It is possible to develop a healthcare organization that can balance its resources to focus on both providing innovative services and satisfied patients.
- Four different approaches to address service innovation in healthcare were identified in Swedish healthcare: *operational performers*, *quality improvers*, *directed innovators,* and *empowered innovators*.
- Two alternative routes to improve the focus on service innovation were identified in Swedish healthcare: an exploratory and a consultative service innovation route.

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L. Witell (ed.), *Service Innovation and Management*, Future of Business and Finance, https://doi.org/10.1007/978-3-031-76560-5_13

Introduction

The healthcare system is under increased pressure. On the demand side, the increased pressure is partly due to healthcare serving the request for customized care, aging population, a larger range of diseases among all age groups, and dealing with the concessions of a pandemic. This requires not only new types of care, but also the need to reprioritize non-acute care due to the COVID-19 pandemic. On the supply side, there are increasing costs due to medical and technological advances, providing new and better care. These circumstances, combined with increased demand, higher costs, and different treatment logics, place healthcare organizations in a position where they need to improve the care of patients both in short- and long-term perspectives (that is, handle the requirements of today's healthcare and innovate for the future).

Various quality improvement programs, such as Lean, value-based care, and patient co-production, have been implemented to improve healthcare quality and productivity (Elg et al., 2011). These approaches aim to support healthcare professionals to work faster, better, and more cost-effectively while providing high-quality care and creating satisfied patients, both now and in the future. At the same time, healthcare innovation has been viewed as having a logic that is different from that of quality improvement (Omachonu & Einspruch, 2010). Over time, however, the narrow focus on innovation has expanded from strictly medical and technological innovation and the improvement of quality and efficiency to include service innovations that focus more on patients and change the processes, business models, and co-ordination of multiple actors in healthcare systems (that is, innovations that could be labeled service innovations) (Witell et al., 2016).

Innovation in healthcare can be a way of helping medical professionals work smarter, faster, and more cost-effectively while providing high-quality care (Samuelsson et al., 2019). This brings forward the idea that quality improvement and service innovation should be complementary approaches to reaching higher patient satisfaction. However, this suggestion raises an important question: How should healthcare be organized to improve patient satisfaction and introduce service innovation into the daily service of their patients at the same time? The purpose of this chapter is to explain how healthcare organizations can improve both their innovativeness and customer satisfaction. We have drawn on service research by studying (a) innovation types and (b) development practices to develop a typology of different avenues for improving healthcare, both for today and tomorrow. Through combining (a) how to work on service innovation, with (b) what creates satisfied patients in healthcare organizations, the current study addresses how to balance quality improvement and service innovation. Our conclusions suggest that there are specific development practices that healthcare organizations need to apply to further develop the care of patients.

Delivering High-quality Healthcare Today: Patient Satisfaction in Healthcare

Simply stated, patient satisfaction is a patient's evaluation of their experience with a healthcare provider, including the outcome, process, and brand. Traditionally, customer satisfaction has been key since it influences customers' repeat purchase decisions and subsequent company profits. In public healthcare, however, it is used mostly to benchmark the performance of different healthcare providers and to improve the care processes to improve patient outcomes. Healthcare providers are increasingly seeking to improve patient well-being by providing personalized services that match patients' needs, abilities, and preferences (Engström et al., 2022).

Patient satisfaction can be evaluated for individual care episodes and for long-term treatments. In practice, this is called transaction-specific satisfaction and cumulative satisfaction (Johnson et al., 1995). Transaction-specific satisfaction is a customer's evaluation of his/her experience with and reactions to a particular transaction, episode, or service encounter. Over the last decade, satisfaction research has grown to include an emphasis on cumulative satisfaction, defined as a customer's overall experience with a product or service provider.

In healthcare, one school of thought focuses on measuring the outcomes of healthcare process; the better the treatment outcomes, the better care patients are receiving. While this concept appeals from the perspective of a service provider, it may not fully capture the patient's perspective of healthcare. By contrast, another school of thought focuses on measuring a patient's perspective based on patient satisfaction. A criticism of this approach is that patient satisfaction is subjective and unrelated to clinical outcomes. However, healthcare service provision depends on value co-creation (McColl-Kennedy et al., 2017). Value is created when patients and service providers interact by combining their resources and capabilities to improve patient well-being and satisfaction. Consequently, patient satisfaction is closely linked to patient outcomes, as satisfied patients are more likely to adhere to treatment plans, follow-up appointments, and take prescribed medications. This can lead to better health outcomes and lower healthcare costs in the long term (Pascoe, 1983).

Patient satisfaction is typically followed in a patient barometer or a patient satisfaction model where the healthcare provider would like to know what makes patients satisfied with their care process. On their own, patient satisfaction measures are not particularly meaningful. What healthcare managers want to know is: (1) where do I have to improve quality to increase patient satisfaction; and (2) if satisfaction is improved, what are the payoffs in terms of better healthcare outcomes? The focus here is on what creates patient satisfaction rather than the outcomes of satisfaction.

Improving Healthcare for Tomorrow: Service Innovation in Healthcare

A shared view that summarizes the core of service innovation is a new service (offering) (Witell et al., 2016). It is based on a research paradigm that takes the perspective that every firm, to some extent, is innovative and develops service innovations. However, viewing service innovation as a new service is not without problems, because "new" is a relative concept, where newness can refer to new to the firm, new to a specific market, or new to the world (Toivonen & Tuominen, 2009). Taking the view of service innovation beyond a new service, Gustafsson et al. (2020) conceptualized the "what" of service innovation as a new offering that is put into practice, is adopted by, and creates value for one or more stakeholders. This view of service innovation emphasizes that a new service needs to be implemented to become an innovation. It further emphasizes that value does not need to be captured in monetary terms, but it emphasizes value for the patient and society; that is, it provides a perspective on service innovation that fits healthcare in the public sector. A complementary way of understanding service innovation is that the new offering can be described through categories or classifications that distinguish different innovation types (Snyder et al., 2016).

The point of departure in the present chapter comes from the *Oslo Manual* (OECD, 2005), which views service innovation as the implementation of a new or significantly improved product (good or service) or process, a new marketing method or a new organizational method in business practices, workplace organizations, or external relations. This view of service innovation can be divided into two innovation types: technical innovation and non-technical innovation. Both innovation types are important for bringing about change in an organization, but they have different roles. Technical innovations are known to use new technologies to recreate existing services or create new services to enhance customer value by targeting external aspects of organizations (McNally et al., 2010). Non-technical innovations strengthen organizations' work activities, processes, and human resources by targeting their internal operations (Crossan & Apaydin, 2010). Even if they are distinctive in type, they are also complementary, where sequential implementation of the two types of service innovation has more profound effects for the efficiency and effectiveness of the organizations and the patients they serve (Samuelsson, 2023).

Improving Healthcare: Identifying Development Practices that Makes a Difference

Development practices in healthcare are often described as nonlinear, iterative, and disordered and as taking place at an individual level (individual physicians or nurses), on a department level (through introduction of new technology), on a hospital level (new ways of working), or through entrepreneurs (Samuelsson & Witell, 2022).

However, there is also extensive research on the *how of service innovation*; that is, the development of service innovations, which describes a *formal* process within service firms for developing service innovation. Toivonen and Tuominen (2009) identified three different patterns of the development of service innovations that are based on observing development practices in three stages: the emergence, development, and application of an idea. The three stages can be iterative, enabling the emergence of different patterns of service development. The three models presented on the basis of the patterns are (1) the R&D model, (2) the model of rapid application, and (3) the practice-driven model. The R&D model is common in manufacturing and is characterized by the allocation of specific resources to the development stage, where the service innovation is developed and tested before being put to market application (Toivonen & Touminen, 2009). In the model of rapid application, the service innovation is quickly brought to the market for an evaluation. If the service innovation tends to be successful, more resources are invested in the innovation following a more systematic development process. The practice-driven model is characterized by the co-created step-by-step together with users, and the observed newness is made after it has been put into use. After the service innovation has been recognized by customers, the development is performed in a more systematic manner (Toivonen & Touminen, 2009).

Service providers have invested in developing formal processes, using integrated development teams, involving customers and business partners, and forming a service innovation strategy. During this process, methods as service design are often applied, concerned with systematically applying design principles and design methodology. However, given the diverse spectrum of innovation approaches, for development practices we take our departure from the proposition that (a) multiple actors need to be involved in the development of service innovation (often viewed as cross-functional integration), (b) structure is needed to support improvement and innovation work, and (c) co-operation between different actors is needed to represent external organizations and interests (Edvardsson & Olsen, 1996). Identifying differences in innovation types (what) and development practices (how) in healthcare organizations that have attained high levels of patient satisfaction, in combination with high innovativeness, can help other healthcare organizations understand not only why they have reached certain outcomes, but also how to develop their organizations to improve them.

Improving Swedish Healthcare Through Development Work

This chapter is based on combining two different perspectives: a provider perspective on service innovation and a patient perspective on satisfaction. The provider perspective is based on a service innovation survey of primary care unit operation managers, and the patient perspective is based on a patient satisfaction survey of primary care units. By combining these two perspectives using two data sets, we have been able to link patient satisfaction and service innovation outcomes to (a)

what innovation types to develop and (b) which development practices to use in the development process.

Statistics Sweden conducted the healthcare service innovation survey by investigating primary care units (n = 286) in Sweden. The 33 percent response rate corresponded to about one-third of all primary care units in Sweden. The survey focused on how primary care units develop and diffuse service innovations by concentrating on four specific areas: (1) innovation operations at the healthcare unit, (2) types and outcomes of service innovations introduced, (3) support and support function for innovation operations, and (4) drivers and strategies for innovation operations. In particular, the survey enabled us to capture innovation type through questions about what innovations the primary care units had pursued, where these questions could be divided into technical and non-technical service innovations. We also captured development practices through questions about what actors were involved in development work (such as physicians, nurses, and patients), how the work was structured (such as teams and development units), and with whom the co-operation took place (such as patients, hospitals, and universities). Finally, we captured the outcomes that the primary care units had achieved through their service innovations, including measures such as reduced waiting times, better care, and less administration. The outcomes were added to create an index of outcomes achieved through service innovations.

The patient satisfaction survey data were taken from the Swedish Association of Local Authorities and Regions [*Sveriges kommuner och regioner*] (SKR) investigation of primary care units in Sweden. The purpose of this yearly survey of around 300,000 participants is to provide a healthcare consumer viewpoint to improve healthcare from the patients' perspective. We captured patient satisfaction for each of the different primary care units. It was calculated as an average of about 200 patients for each unit.

By matching these two surveys, we were able to identify primary care units that have either high or low levels of patient satisfaction and primary care units that have either a high or low outcomes on their service innovation activities. We chose this approach to better understand the primary care units' innovation approaches, describe the different approaches, and relate them to each other. We used a median split to separate the primary care units that had reached high(low) patient satisfaction and high(low) innovation outcomes. This resulted in four groups of primary care units reaching different levels of patient satisfaction and innovation outcomes. By dividing the primary care units based on outcomes (patient satisfaction and innovation outcomes), we identified differences in innovation types and development practices, which enabled us to determine the characteristics of primary care units reaching different outcomes. Using ANOVA, we identified statistical differences in innovation types and development practices.

What Can We Learn from Swedish Healthcare?

In this section, we present the results of our study. We start by providing examples of what types of service innovations have been developed and then go through the identified characteristics of the innovation types and development practices of the primary care units that had reached high(low) patient satisfaction and high(low) innovation outcomes. We have labeled the four groups and described their characteristics based on the identified similarities and differences in Table 13.1.

The qualitative results show that the primary care units have developed and implemented several different types of service innovations. Examples include online access to *my journal*, where medical records are made available; changes in medical treatments; making invasive surgery non-life-threatening; a management system that connects social services with healthcare; and a new model of care for senior patients with multiple diagnoses. These examples demonstrate the wide variety of innovation activities going on in primary care units, covering both technical and non-technical service innovations.

The ANOVA analysis, based on separating the primary care units that had reached high(low) patient satisfaction and high(low) innovation outcomes into four groups, revealed several key results regarding their characteristics. The first group, which is labeled *operational performers*, is characterized by low patient satisfaction and low innovation outcomes and can be described as healthcare units that are only achieving low outcomes through their quality improvement and innovation efforts. These are primary care units with a clear focus on their daily operations and they focus most of their resources on providing daily care to their patients. They have not been able to develop structures for developing service innovations to be implemented in their operations. Further, they do not involve the different roles of the primary care unit (such as physicians, nurses, and administrative personnel) or external actors (such as pharmacists and patient groups). To summarize, this group of primary care units focused on getting the most out of the existing operations and had scarce resources available to further develop their operations.

Table 13.1 Overview of results

		Operational performers	Quality improvers	Directed innovators	Empowered innovators
Type of innovation	Technical	Low (1.28)	Low (1.78)	High (3.88)	High (3.68)
	Non-technical	Low (1.28)	Low (1.21)	High (4.39)	Medium (3.97)
Development practices	Actors	Low (1.23)	Low (1.56)	High (3.95)	High (3.85)
	Structure	Low (1.04)	Medium (2.25)	High (3.75)	High (3.35)
	Co-operation	Low (1.34)	Low (1.73)	High (3.97)	Medium (3.34)

Note: The values have been standardized on a scale of 0 to 5. We present the identified differences at $p < 0.05$

The second group, *quality improvers,* is characterized by high patient satisfaction and low innovation outcomes. Units in this group exhibited higher levels of structure in their innovation efforts than those in the *operational performers* category. The empirical results suggested that innovations are identified, further developed, and implemented in their operations. This has a direct effect on the operations of a primary care unit. However, Samuelsson et al. (2019) have proposed that much of the innovation work in healthcare is organized in innovation structures that focus on incremental innovation, suggesting that these structures for service innovation are not successful. Solely having a structure in place only seems to influence the operations of today and is insufficient to influence the operations of tomorrow.

The third group is *directed innovators.* Units in this group are characterized by low patient satisfaction and high innovation outcomes and have development practices in place with a focus on non-technological service innovations. However, although these primary care units develop and implement service innovations in their operations, these initiatives only have a low influence on patient satisfaction since the service processes that are changed are situated in the back office of the operations. This suggests that the focus is on changing administrative processes and improving the work processes of physicians and nurses. The results are improved employee satisfaction and better efficiency, but these outcomes do not reach or are not appreciated by the patients since they are behind the line of visibility (Bitner et al., 2008).

The fourth group, characterized by high patient satisfaction and high innovation outcomes, is labeled *empowered innovators*. This group has an improvement and innovation strategy focused on service innovations that have a direct effect on the patient. In contrast to the *directed innovators*, the empowered innovators move the innovation efforts from the back office to the front office, where changes in the operations have a direct effect on patients. This means that most service innovations are beyond the line of visibility (Bitner et al., 2008). This group is further differentiated by the fact that it has less external co-operation, suggesting that innovation work is more focused on involving patients, nurses, and physicians. Approximately one-fourth of the primary care units were able to develop such a service innovation strategy.

How Do Different Healthcare Units Work with Service Innovation?

The empirical results showed that there are specific development practices and innovation types that healthcare organizations need to address to further develop the care of their patients. We identified four groups to categorize how healthcare units address service innovation: *operational performers*, *quality improvers*, *directed innovators,* and *empowered innovators*. These four groups varied in their efforts to structure innovation work. In general, the *directed innovators* and the *empowered innovators* focused more on both innovation types and organizing development practices than the *quality improvers* and the *operational performers* primary care

units. The *directed innovators* and the *empowered innovators* reported significantly more external collaboration, bringing in more external ideas and having an established structure for innovation. However, it seems that the *empowered innovators* had less external collaboration, suggesting that involving sufficient actors is enough to achieve a service innovation outcome.

Based on our empirical investigation of what innovation types and development practices characterize primary care units with high customer satisfaction and high innovation outcomes, we developed a conceptual framework for service innovation in primary care (Fig. 13.1). This framework guides organizations on what to focus on (innovation types) and how to do it (development practices) to achieve better healthcare. First, the framework provides the characteristics of primary care units working on service innovation. It shows the innovation types and development practices that characterize primary care units that achieve high customer satisfaction and innovation outcomes. It shows that there are large differences between primary care units that achieve large effects from their innovation efforts and those that do not. It also shows that more is not always better; primary care units that had medium collaboration with external stakeholders achieved higher customer satisfaction than those that had strong external collaborations.

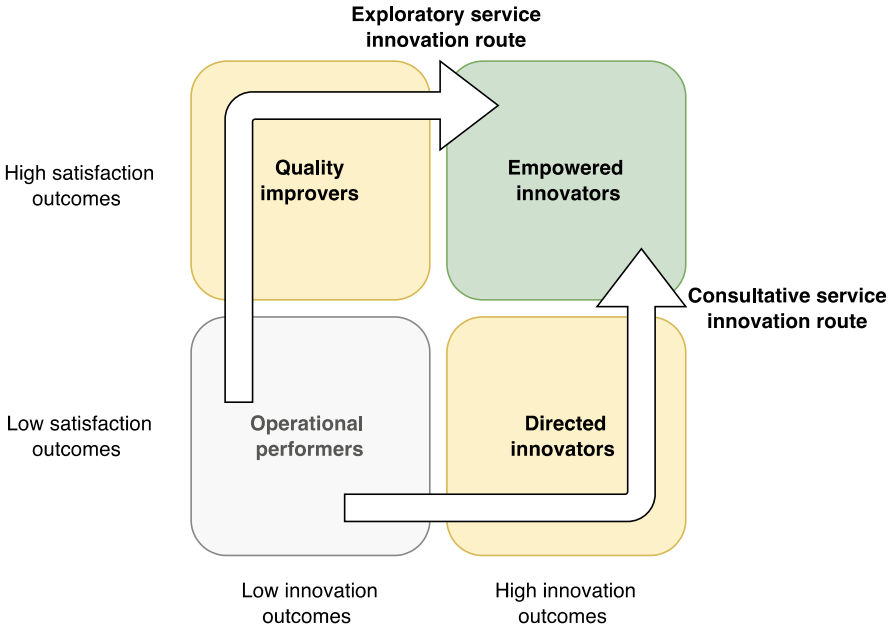

Fig. 13.1 Conceptual framework for service innovation in primary care

Routes for Improving Healthcare

In addition to labeling and describing the different primary care units based on their innovation work, the framework also suggests two alternative routes for how primary care units can develop their approach to service innovation. Rather than suggesting that one route is better than the other, the framework suggests that, based on the current status of innovation work and what results an organization would like to achieve, a different route might be preferable. For primary care units that face low patient satisfaction and low outcomes from their service innovation work, there are two routes to developing their operations: an exploratory and a consultative service innovation route. The former focuses on developing a structure for service innovation, which means starting to formalize improvement teams and ensuring that identified improvements are implemented in daily operations. It could be working with methods such as service design and, for example, mapping customer journeys to improve the customer experience. Developing structure and development practices is key to implementing good improvement ideas in the clinic and during service encounters with patients. By doing this, the primary care clinic can establish a structure for quality improvement and work with what is in front of them in the daily operations. This approach is in line with previous recommendations for service innovation: it is crucial for service organizations to first create the right circumstances for service innovation and adapt new services with and for customers before launching full-scale new services (Edvardsson & Olsson, 1996). This approach provides patients with valuable care today while incrementally preparing for a better tomorrow. The next step on this route includes involving both internal and external actors in quality improvement. This will widen the scope for what service innovations to pursue and the potential innovation outcomes, while already being comfortable working with service innovation efforts. The term "exploratory service innovation route" comes from its starting with some "hands-on" changes in the innovation works (creating structure) that should have some immediate effects and then building on this momentum with several additional changes to create more substantial external innovations aimed at building a better tomorrow.

The second route, consultative service innovation, initially focuses on reengineering innovation work in the primary care unit. This means acknowledging that the old way did not create any change and, in its place, creating a new structure that directly involves multiple internal and external actors. Implementing new service innovation practices often means that organizations benchmark and copy other organizations' practices. In healthcare, the most common methods used for structured service innovation work are Lean, TQM, and similar methods derived from the quality movement that focus on improvements for service quality. Even though these methods include means for an externally focused approach, they tend to favor internal operations when implemented into organizational operations. Ettlie and Johnson (1994) identified this effect, explaining that improvement work becomes too "method-focused," meaning that improvements do not reach the customer. Hence, organizations need to shift the focus away from internal improvements and adapt their structures for external input to become more focused on targeting

patients. This refocus primarily involves getting participation from external stakeholders, such as patients, pharmacies, and social welfare. By changing their focus from internal to external innovativeness, primary care units can create satisfied patients.

Summary and Conclusions

This chapter describes the status of Swedish Healthcare—how it performs today and how healthcare units could work to improve healthcare in the future. The key to developing the performance of Swedish healthcare through service innovation relies on working with the right development practices at the right time. We have identified what different development practices (actors, structure, and co-operation) should be implemented to further develop healthcare units in Swedish healthcare. In general, the more development practices the better, suggesting that it is not sufficient to structure development work, but there is also a need to further co-operate and involve multiple actors.

The identification of different innovation routes is important. Existing research tells us that service innovation is often based on many small changes, which would suggest that most healthcare organizations would follow an exploratory service innovation route. However, there is also an opportunity to follow a consultative service innovation route, which would allow healthcare organizations to change how healthcare is performed at its core. The key to the success of this route is the ability to switch from an internal focus to an external one over time.

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