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Value co-creation in food online sales

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ABSTRACT:
The aim of the study is to examine the value co-creation potential in food online sales and those business models. This thesis studies and defines the opportunities for value co-creation and its possibilities to be utilized in digital sales. The framework of the study combines value co-creation literature and business model literature, but value co-creation being the focus of this study. The business model canvas has been utilized to examine and define value co-creation opportunities in companies' business models. The business model canvas is used to analyze the value co-creation potential from several perspectives and therefore the findings support existing literature. Multiple case studies were used in the methodology of the study. The thesis consists of four separate cases in which the case companies represented businesses in Finnish food sales, delivery, and software developing. Semi-structured interviews were used to collect the information and data for the thesis. All the interviewees were currently working in the case companies and closely with the studied business. The study utilizes a subjectivist and interpretative approach. There were only minor exceptions in the findings between cases. However, the study found value co-creation opportunities that occur only once in the research. The results defined several value co-creation opportunities located in the value proposition, channels, and customer relationship sections in the business model canvas. The findings show that automation and digitalization have a significant role in value co-creation, especially, when developing new opportunities for value co-creation. However, the study detects that people continue to play a significant role in value co-creation and the company's business model. Replacing the human in digital food sales is extremely challenging according to this study but the collaboration of human, robots, and automation can benefit and increase the efficiency of the operations.

KEYWORDS: Value co-creation, Business model, Business model canvas, Online sales

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1 Introduction

The food industry is in rapid change when online services and various platforms enable a rethinking of food sales. Traditionally, food is bought from grocery stores or marketplaces, in which customers pick up ingredients and put them into the cart. Digital development has turned these business operations upside-down when the customer can order food online and get it delivered to its door. Technology is not the only reason for the change, but customers are more aware of the possibilities and, at the same time, ready to test new kinds of services. Digital devices have become routine, and a major part of people use internet-linked devices daily. Still, food is mostly sold traditionally, and in Finland, the minor share of total sales of food was sold online. Online stores have a lot to develop and increase their sale. One way to increase the sale and revenue is to provide more value for the customer than regular grocery stores can and take the customer as a part of value creation.

1.1 Motivation for the study

Purchasing products and services via the internet is popularized in the last decades. Still, the transformation to purchase food from web stores has been slow and customers seem to continue shopping in traditional grocery stores. The technology is not the challenge itself because various companies are successfully selling and delivering online orders to the customers. Consumers' behavior to purchase and order food have not developed in the same base as technology. For that reason, it is reasonable to study this phenomenon and try to find explanations on how to shape the business models and involve customers to create value and purchase food online. The business model is in a crucial role when planning the strategy and value creation, and, in the online world, customers are taking an important role in the delivery chain, and, for that reason, the co-creation value rises to a major place in the study.

Online competition is significantly more challenging because entry to the market does not depend on the company's location, and it does not need massive investment in the

stores and other facilities. (Porter, 2001) For that reason, companies require to consider their business models and how the value is provided to customers. Simultaneously the online platforms have to offer for the customer a possibility to interact during the whole delivering process and co-create value.

1.2 Research gap

The theory of value co-creation has been studied for a relatively short time, and it brings a new perspective to the value creation theory. The value co-creation literature looks value creation process as more customer-centric and takes customers as a part of the value creation process in the company's operations. (Vargo et al., 2008) In the value creation literature, the theory is presented as part of the service-dominant logic, which includes the phases of the product or service creation. In this logic, the company focuses on providing value for the customer, and simultaneously customer becomes a value co-producer. This means that all value is co-created, and the customer in the last resort decides the needed value. (Grönroos, 2011; Vargo & Lusch, 2004) The studies around this topic focuses on mainly the operation of the companies, but the value co-creation in the online platforms and as a part of the business model have not been studied, and it has remained unclear.

The business model literature has no consensus about the term and meaning, and for that reason, literature has many approaches on the subjects. The business model theories have been studied widely and from diverse perspectives, such as how the business model creates value, (Teece, 2010) how the company creates value and how it delivers, and captures it, (Osterwalder & Pigneur, 2010) and how the business is organized efficiently through the company and delivered for the customer. (Doz & Kosonen, 2010) However, the business model literature has not been utilized with co-creation value in online platforms. Furthermore, it has not discussed how it can facilitate work with online platforms, and that leaves the gap for the research.

The thesis observes value co-creation opportunities in business models of food online sales through multiple case studies. Though the online platforms and web stores have operated successfully over a decade the food delivery creates a more challenging and multidimensional environment to be examined. The customers' preferences form unpredictable cases, which initiate a need to utilize value co-creation to ensure the satisfaction of the customers. It is necessary to recognize the customers' needs while planning the business models and strategy for the companies, which sell and provide food via digital channels. To ensure better understanding from the field it is justified to research this specific topic. The research gap is presented in figure 1.

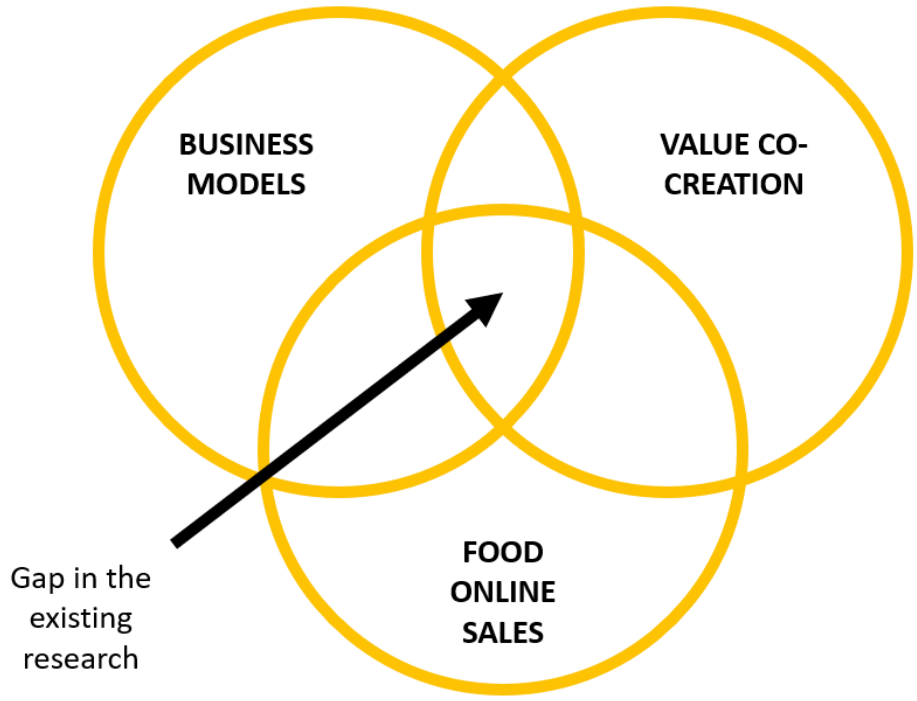

Figure 1 The research gap of the thesis.

1.3 Research questions and objectives

The multidimensional and challenging research environment produce challenges for the research, but it does not prevent the study and permit an opportunity to examine the field and its practices. Thus, the research questions are as follows:

How the food online sale enables value co-creation?
What are the most efficient parts of business models to co-create value in online food sale?

To answer to the research questions the targets of the research are set as follows:

To describe value co-creation opportunities and find out the best solutions in online food sale.
To describe business models of the food sales in online platforms and find the most suitable opportunities for the value co-creation.
To explain how different food online sale solutions can offer opportunities to value co-creation.
To determine similarities from the studied cases.

1.4 Structure of the thesis

The thesis begins with a literature review that consists of the theory of value co-creation and business models. Value co-creation literature presents the definition of the term and background of the literature. This chapter has also emphasized the theory of value creation and value co-creation on the internet and online platforms. Business model literature starts from the evolving process of the theory and then presents multiple definitions of the term. This section also displays the business model canvas, which is utilized in case study section to visualize the results. At the end of the section, is illustrated synthesis from both theories that work as a summary and provides a model for studying the

opportunities for the value co-creation in online food sales. Furthermore, the model supports the writing process and provides a basis for the empirical study.

The third chapter of this thesis presents the methodologies of the study. It illustrates the research strategy and method, and the case selection process. This section also describes how the data of the research was collected and analyzed, and how the validity and reliability of research were ensured.

The fourth chapter focuses on the findings of empirical research and present and analyze results. The cases are analyzed first in within-case analysis and later in the cross-case analysis. The analyses provide a deeper understanding and permit them to describe the most important opportunities for the value co-creation. It also facilitates to find similarities and differences from the cases that enable to generalize results. The last chapter discusses the theoretical and managerial contributions and provides suggestions for future research. The structure of the thesis is presented in the Figure 2.

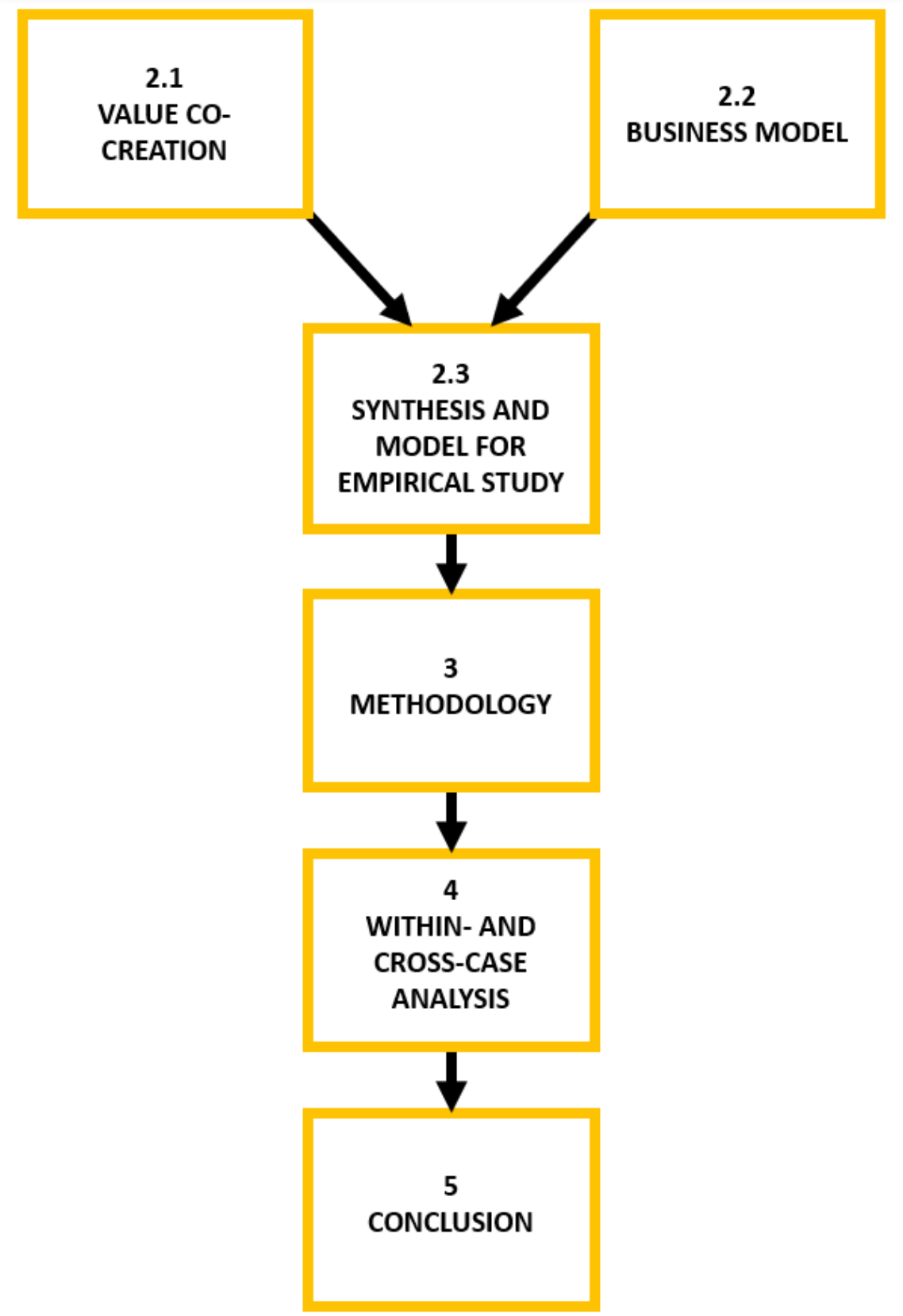

Figure 2 The structure of the thesis.

2 Literature review

The literature review begins from a value co-creation literature and continues with a business model literature. The end of the literature review formulates a synthesis from the previous literature parts and explains how value creation is studied by using the business model perspective.

2.1 Value co-creation

Although there is no unequivocal definition for the value creation and service-dominant logic treats it as a co-creation, the term can be conceptualized as a process that combine interactions between service provider and customer, and probably other parties. Also, its objective is to improve a user's position or increase wellbeing. (Grönroos, 2011; Grönroos & Voima, 2013)

First, recognition of the value co-creation theory starts from the theory of value creation. Traditionally, value creation explains the business methods and where the organization's actions create value into the product or services. In this goods-dominant logic (G-D), the value is attached inside the organization through its actions. And the role of customers is to purchase the generated product or service. The perspective assumed that company has a clear view of its customers and their requirements and can deliver correct value for the customer and fill the need. (Prahalad & Ramaswamy, 2004; Vargo et al., 2008)

This product-oriented perspective focuses on value delivery while more modern service-oriented research concentrates on value-in-use. The term value-in-use is determined as value for the customer that they created during their usage of resources. The customer creates and determines the value itself. Service-dominant logic (S-D) includes the company that controls the value creations and customers that can join as co-creator. The roles of the producers and consumers are unclear, which means all value is co-created. (Grönroos & Gummerus, 2014; Grönroos & Voima, 2013; Vargo et al., 2008)

The newer S-D logic challenged the companies old G-D logic that perspective was firm centric, and S-D turns the focus more customer-related. (Vargo et al., 2008) These differences are presented in table 1.

Table 1 Differences of the value creation between the G-D logic and S-D logic (Vargo et al., 2008)

	G-D logic	S-D logic
Value driver	- Value-in exchange	- Value-in-use or value-in-context
Creator of value	- Firm often with input from firms in a supply chain	- Firm, network partners, and customers
Process of value creation	- Firms embed value in "goods" or "services", value is added by enhancing or increasing attributes	- Firm propose value through market offerings, customers continue value-creation process through use
Purpose of value	- Increase wealth for the firm	- Increase adaptability, survivability, and system wellbeing through service of others
Measurement of value	- The amount of nominal value, price received in exchange	- The adaptability and survivability of the beneficiary system
Resources used	- Primarily operand resources	- Primarily operant resources, sometimes transferred by embedding them in operand resources-goods
Role of firm	- Produce and distribute value	- Propose and co-create value, provide service
Role of goods	- Units of output, operand resources that embedded with value	- Vehicle for operant resources, enables access to benefits of firm competences
Role of customers	- To "use up" or "destroy" value created by firm	- Co-create value through the integration of firm-provided resources with other private and public resources

The S-D logic represents the view, in which the customer gets a major role as a co-producer. The process in value creation includes wider actions of the company and extends the process to interact with the customer. This can call as co-creation value that is defined as a system that forms a co-creation platform. The platform connects two participants, for an instant, a company and a customer. The process, consumption of the process, and value creation are combined as one direct interaction process. In this mechanism, the provider of the service is connecting with the value creation of the customer and together co-create action that enables the value forming. Co-creation value is strongly neglected to the cooperation of the production and customer, and cannot be possible if there is no direct interaction. (Grönroos, 2011; Grönroos & Gummerus, 2014; Vargo et al., 2008) In this interaction, the customer perceives and determines the value formed on the value-in-use that relies on the benefit of the results. The company can only offer value proposals for the customer, and the customer makes decisions based on the needed value. (Vargo & Lusch, 2004)

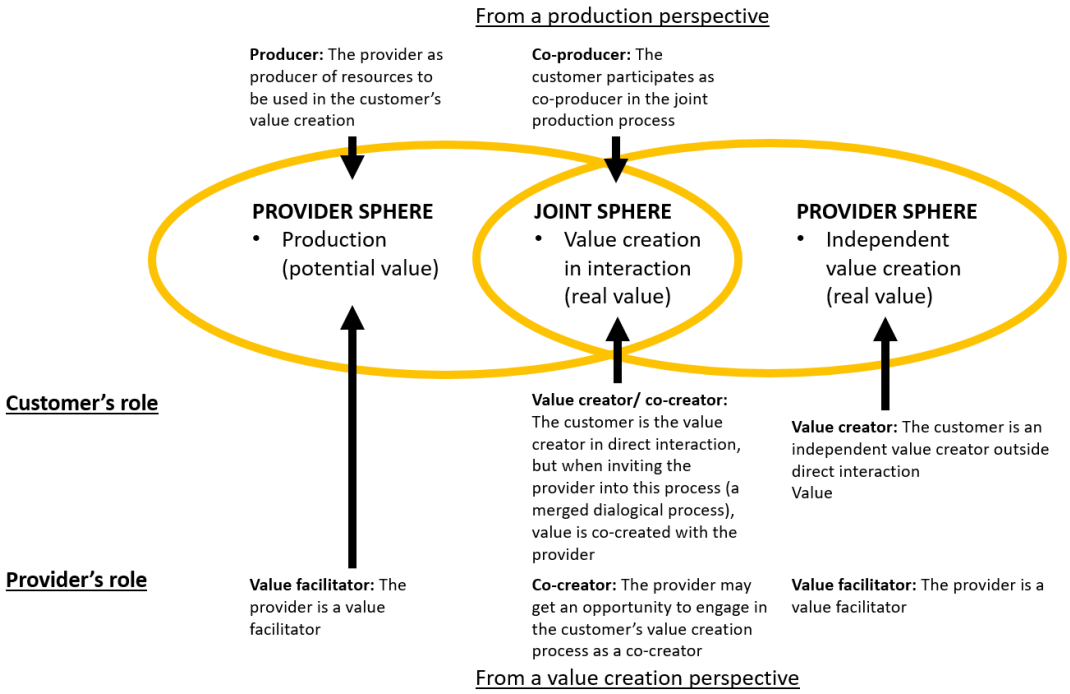

Figure 3 Value creation spheres (Grönroos & Voima, 2013)

As in figure 3 can be see, the interaction permits the customer's co-producer role and participation in the production process. Simultaneously, the provider can affect the customer's value creation process with a dialogical process and together co-create value in the production. However, it is remarkable to notice that the provider's influence can have either a positive or negative effect on value creation. It is also possible that interaction does not occur because of the customer's changing interest. For that reason, the quality of the interaction, understanding of the customers habits, and how the companies activities are combined in interaction are in a major role. (Grönroos & Voima, 2013)

It is obligation for the company to realize that the existing interaction is representing as a platform, which favorably influencing the consumers' usage processes and value creation. The company's ability to understand customer needs is based on interaction and communication with the customers, which facilitates learning how to manage customer interaction and create the possibility to value co-creation. (Grönroos, 2011)

2.1.1 Background of value co-creation research

When analyzing the service marketing literature, it presents a joint interaction-related and co-creational conditions in the processes of service. In the other words, consumption and production processes were comprehensively studied in 1970s. Service marketing studies developed conceptual models to provide understanding of how service was produced in cooperation and connect in straight communication between customer and service providing organization by utilizing co-creation processes. Furthermore, the co-production between the service provider and consumer was debated in economic analysis in 1970s, in which definition of service was called a changing condition of a customer or an activity of another party that cause goodness for person's belongings. (Grönroos, 2012)

Concepts of value and co-creation were unrecognized in service marketing research at that era. Therefore, the models analyze the implementation of the services in the business. Still, the research included the implicit understanding that customers should appreciate the emerged and experienced service. After the 1970s, extended research detailed the different elements of the service encounter, and newer studies have attached the perspective on the marketing and business. (Grönroos, 2012)

In their research, Prahalad and Ramaswamy emphasized the evolution and transformation of customers from passive audience to active player. This transformation has a remarkable impact on the value co-creation. They noted a new logic in which value was co-created and the value was linked to the personalized experiences. In addition, they presented early examples of the organizations that were changing activities from the mature industry models to goods and services that provided experiences for the customer. (Payne et al., 2008; Prahalad & Ramaswamy, 2004)

Recent research of value co-creation has been focusing on aspects of how to provide value for the customer, satisfy an expectation, improve supply chain or value chain, and increase marketing strategy effectiveness and operational efficiency. (Payne et al., 2008)

The literature on value co-creation has expanded considerably with the utilization of various approach such as co-development and co-design of the value proposals, co-learning, and co-innovation. Especially, the value co-creation is traditionally seen as the product producers tool in which the company and customers cooperate to bundling product and services. (Kohtamäki & Rajala, 2016)

2.1.2 Value creation online

There is a minority of academic literature on the experience of the companies that have successfully utilized the internet as a platform for co-operating the innovations. (Sawhney et al., 2005) For companies, the internet era made it possible to have a new way to interact with customers. It has positively impacted the content and process dimensions of knowledge and simultaneously supports the product development. Virtual communities enable strong relationships that increase the customers' willingness to share knowledge and be in interaction with the company. This facilitates the company to provide more value for the customer when it responds better to the customers' needs. (Sawhney et al., 2005)

The technological breakthroughs provide opportunities for the company to develop advanced technological solutions that generate new ways for providers to connect with consumers to co-create novel solutions. The transformation permits the development of novel channels to reach customers. A combination of the different industries creates opportunities to combine competencies, knowledge, and capabilities, and form contemporary ways of co-create value. Furthermore, changes in customers' habits provide new co-creation opportunities when preferences and lifestyle change. This demand awareness from the company that it can respond correctly to the changing needs of the customers and permit an innovative way for the co-creating value. (Payne et al., 2008)

The technological development has enabled a massive transformation in structures of the global economy. The fast-emerged digital awareness leads towards networked, digital-platform-based operating mode that functioning online. The term, platform, has

several meanings. In this thesis, the term platform is defined from the perspective of platform-as-ecosystem that emphasize transactions between actors. The term platform is referring to an ecosystem that is combined to the activity system structured around the digital platform in which diverse activities can pliably create and combine offerings. (Dufva et al., 2017)

The value in the platform based on the effectiveness of the network and its functioning. Companies offer a platform to actors that respond to the others' needs. It enables collaboration, allocation, and efficient usage of resources. Co-creation between platforms adds also value for stakeholders. (Dufva et al., 2017) Often the platforms also need network effects to operate efficiently and properly. The business model is dependent on the users and service providers that permit the ordered action. The more users are on the platform, the more efficient the service and solutions are for the client's problem. (Gawer & Cusumano, 2014)

The usage of the platform as a business tool does not guarantee successful or value creating business for the company. Various platform options at a similar business field may produce low-quality services and goods and affect negatively to customer experience. Negative reputation affects the economic sustainability of the platform and viability of the business. (Wareham et al., 2014)

Despite that, there are several examples of successful platforms where business strategy is based on the idea of the platform economy. During the development process, developers are requiring to consider how to engage the user and avoid switching to another platform. However, the development needs to be done without the harassment for the user or a negative impact on the user experience. (Wareham et al., 2014)

The platform should be built to perform a significant role in the core system or to solve the crucial problem of the specific industry. Important features are also the connectivity or possibility to build it on the core solution. The platform enables to expand solutions

or to connect new unknown features afterwards. From the business perspective, a high level of standardization of the platform is suggested because it permits economies of scale and the amortization of fixed costs. With specialized complements and continuous experiments around the core, it is possible to try the limits of the economies of scope. The standardized core enables fast and specialized response to the customers' needs when it is unproblematic and efficient to attach features to the platform. Stability is utilized to maximize variety. (Wareham et al., 2014)

Platforms are no longer only in traditional computers, but they are increasingly attached to the different devices and sensors that develop technological progress. Technology is constantly evolving, which forces the platform developers to continue their work. The core components of the platform require to be changed over time that the platform preserves its competitiveness and technological advantages. (Teece, 2018; Wareham et al., 2014)

From the strategical and business perspective, the internet provides several benefits, such as broader markets and more efficient operations. Nevertheless, the internet permits an uncomplicated way to compare rapidly and widely the prices of the product or services, which negatively affect the business when the margins need to be competitive. The internet has fractured the barriers to the new business entrants that could change the business model and reinvent the industry. (Porter, 2001) As a whole, the internet, and platform economy can be a serious threat to the traditional industry if they do not respond and develop their business operations. (Lehdonvirta et al., 2019; Porter, 2001) For the traditional industries Porter (2001) has defined a model of the positive and negative effects of the internet that affect the industry's structure. The model is presented in Figure 4.

Figure 4 The influence of the internet in industry structure. (Porter, 2001)

2.1.3 Value co-creation in food delivery platforms

The way how the web stores or applications can be accessed, navigated, and how those respond to the customer's actions, influences the accessibility. The experience of the customer affects the opinion of the service. Customers consider the service process easy, difficult, acceptable, or impossible to access depending on their capabilities and understanding. This determines the readiness of the customer to emerge the service. The negative experience affects the implementation of the service and may decelerate the acceptance of the new kind of service. (Grönroos, 2012)

The digital platform offers several advantages compared to traditional selling processes. It is possible to order food online is possible at any time around the clock. Depending on the online food shopping platform, it is plausible to locate the delivery on the map. The

food delivery may be also free in some cases, and customer can see estimated delivery time. These features create value for the customer. The more accurate delivery and quality of products that exceed the expectations, the more satisfied customers, and a higher level of usage. Despite the above, the digital platform plays a significant role between the customer, the delivery, and the food seller. The platform needs to be easy to use and function effectively in different operations. Ease-to-use refers to simple order placement, pleasant filtering of food experience, and well-operating delivery tracking. (Ray et al., 2019)

The quality of the food is a challenging issue for the platforms because those cannot affect to the actual food or how well it is delivered. With various quality indicators, the platform can indicate the quality of the products, how delivery processes are accomplished, and how satisfied customers have been to the product. The company can provide photos, reviews, and show ratings that facilitate the buying decision of the customers. Customers' possibility to give feedback and rate food is associated to the quality and encourage new customers to buy from the platform. (Ray et al., 2019)

2.2 Business model

As a term, the business model is relatively new but theories that are referring it have been presented even before the generalization of the term. Schumpeter (1934) presented the theory of economic development and new value creation that technological change and innovations enable. He identified multiple sources of innovation that included the presentation of novel goods or innovative types of products, the new market creation, the discovery of new supply sources, and the rearrangement of industries. Schumpeter presented the notion of the creative destruction that notices the continuous change of the business operations and the awareness of the complexity and uncertainty of the economic environment. (Amit & Zott, 2001; Schumpeter, 1934)

After Schumpeter theories, rapidly growth of communication and information technologies, as well as a massive expansion of the Internet has created totally new possibilities

to rethink companies' business models. These developed actions have opened new possibilities to create business models and enabled companies to redirect their way to organize business and create economic value. (Zott & Amit, 2007) One role for the business model is to provide general level description and understanding how the company organize its business and how it creates and distribute economic value. (Baden-Fuller & Morgan, 2010)

The definition for the business model is challenging and scholars do not have common understanding about the definition. (Zott et al., 2011) Depending on the author's viewpoint, the business model describes the relationship between creating and capturing value (Teece, 2010), how an organization generates value and how it is delivered and captured (Osterwalder & Pigneur, 2010), or as a set of operations that create relationships between a company, its customers, and other stakeholders. For the company management, the business model provides a tool to see how to company's business relates to its environment. It is a cognitive structure of how to set boundaries for the business, how it can be used to create value, and how the company can structure its internal activities and governance. nousevat teemat (Doz & Kosonen, 2010)

Zott et al. (2011) describe that the researchers are working mainly in silos and depends on the interest of the respective researchers. Researchers have identified three main interest areas. First area focuses on e-business and utilization in information technology, second area is strategic aspects such as company performance, advantages in competition and value creation. The third is management of innovations and technologies. Although theoretical differences occur in studies, there can be identified some common themes. Especially, there is a prevalent acknowledgment that a business model is a unresearched area, which diverges from the products or services, companies, industries, or networks. It focuses on an organization, but its barriers are broader than the organization's barriers. On the other hand, the term business model can be understood as a way how companies "do business" and how they organize value creation and capture. (Zott et al., 2011)

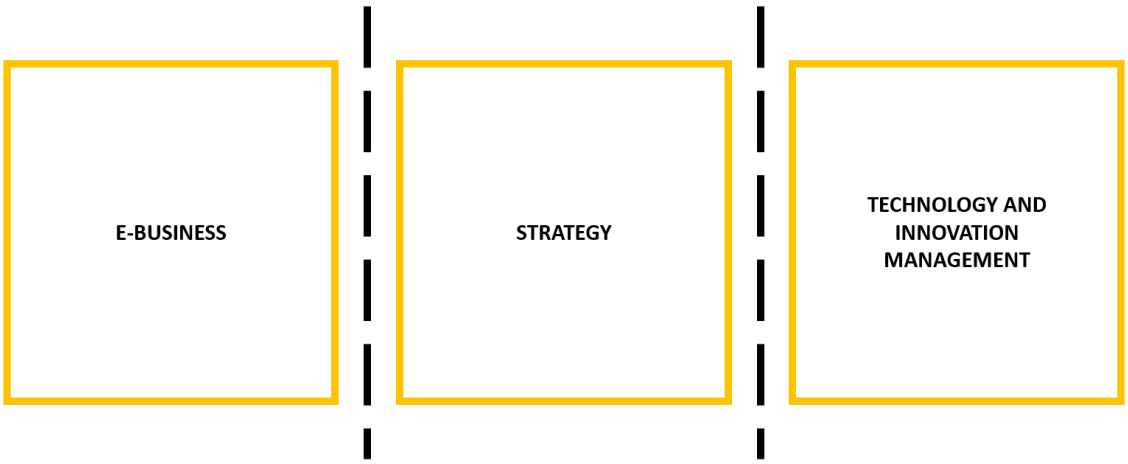

Figure 5 Three streams of business models. (Zott et al., 2011)

Timmers (1998) emphasizes that a business model itself does not present the actual implementation plan of the business. Instead, the business model only provides an architecture for service, product, and information flow. The business model also includes a description of several business activities such as actors, potential advances of the several business actions, and revenue sources. The definition of the competitive advantage, commercial viability, and positioning are provided in marketing strategy. The business model provides only a structure, not the implementation. (Timmers, 1998)

Gambardella and McGahan (2010) approach the definition of the business model from the value-creating perspective. The business model provides direction for the organization of how it generates revenue at an acceptable cost, and how it assumes to provide action for the value creation and capture. (Gambardella & McGahan, 2010) Casadesus-Masanell and Ricart (2010) also emphasize that the business model defines the logic of the company, how the business is operated, and how the value is provided for the stakeholders. (Casadesus-Masanell & Ricart, 2010)

Teece (2010) crystallizes the term as a way how the company organizes the value-creating processes, how it delivers benefits for the customer, and how it captures a portion

of the created value as revenue. A good business model generates remarkable value for the customer, and it provides growing revenues and competitive advantage for the company. However, Teece remarks that a developed successful business model is not a guarantee that the company achieve a competitive advantage. For the competitors, the prosperous business model is simple to copy and it has been implemented rapidly. (Teece, 2010)

Table 2 Definition of business model theories.

Author	Definition
Teece (2010)	How a firm delivers value to customers and converts payment into profits
Zott & Amit (2011)	A system of interdependent activities that transcends the focal activities that transcends the focal firm and spans its boundaries
Osterwalder &Pigneur (2010)	How organization create, deliver, and capture value
Doz & Kosonen (2010)	Tool to see how the business relates in its environment and how the activities are structured
Casadesus-Masanell & Ricart (2010)	A business model is a reflection of the firm's realized strategy
Timmers (1998)	An architecture for the product, service and information flows, including a description of the various business actors and their roles
Gambardella & McGahan (2010)	Business model is a mechanism for turning ideas into revenue at reasonable cost

2.2.1 Value creation and value capture in business model

The business model can be in a significant role in an organization's operations. Clarifying how a business model develops value to the consumer and how the company captures the value from the process, are the main issues when designing the business model. Value creation through business models involves complicated, complementary relationships, and activities among several parties. (Teece, 2010; Zott et al., 2011)

In Schumpeter's theory, value creation is based on innovations. The technology and new combination of resources permit to create new products and production methods that

generate value for the company. Furthermore, the development leads to the transformation of markets and industries, which enable them to create new value. (Amit & Zott, 2001)

It may seem that the basic idea and the business logic behind a new model are effortless to copy. Qualifying a new business model as a patent is improbable, because of its general nature. A description of the business model may get copyright protection, but it infrequently performs as a barrier to competitors that can copy its basic core idea. The business model needs to create barriers against the copying so that it can successfully create and capture value before competitors take the advantage away. Creating operations, activities and advantages that are challenging to copy, the company complicates new entrants coming to the market successfully. Another plausible barrier is the level of opacity that makes it challenging for others to recognize in adequate detail how a business model is utilized, or which of its elements respond to the customer needs. It is also obvious that incumbents in the industry may try replication of the new business model but are not willing to implement that because it may affect negatively existing sales and profits or impact on the current important stakeholders. It is relevant to notice that this barrier does not protect against new entrants, which can copy the model and start without cannibalization anxieties. (Teece, 2010)

Although the company cannot be completely protected from the copying of their business model an efficient capturing value strategy is in the key role. (Teece, 2010) Successful value creation includes elements that support the business model. Content element includes the goods or information that are exchanged as well as required capabilities and resources. The structure is the element that explains the participants, their links, and way to operate. Governance controls the resources and goods, the legal form of organization, and the way how information flows and decides incentives to the participants. (Casadesus-Masanell & Ricart, 2010; Zott & Amit, 2010)

According to Zott et al. (2010), the business model creates value through the activity systems and defines how the value chain is structured. The value chain consists of various actors that are valuable for the final consumer. Zott et al. have identified and categorized these activity systems in four design themes, which explain the systems' dominant value creation drivers. (Zott & Amit, 2010)

Novelty-centered activity system focuses on creating new ways of adopting, linking, or governing activities. Creation and capture of the value are created and captured by the novelty of activities in the business model. The lock-in activity system is focused on the ability to control and keep stakeholders as participants of the business model. Customer's switching costs are built high, or the customers are committed to the network activities that are result from the content, structures, or/and governance of the activity systems. Complementarities are used when the bundling activities create more value for the customers than individual activities bought separately. Efficiency design focuses on companies' ability to utilize the activity system to achieve an efficient way to operate by reducing transaction costs. The value creation in e-business and its sources is presented in Figure 6 (Amit & Zott, 2001)

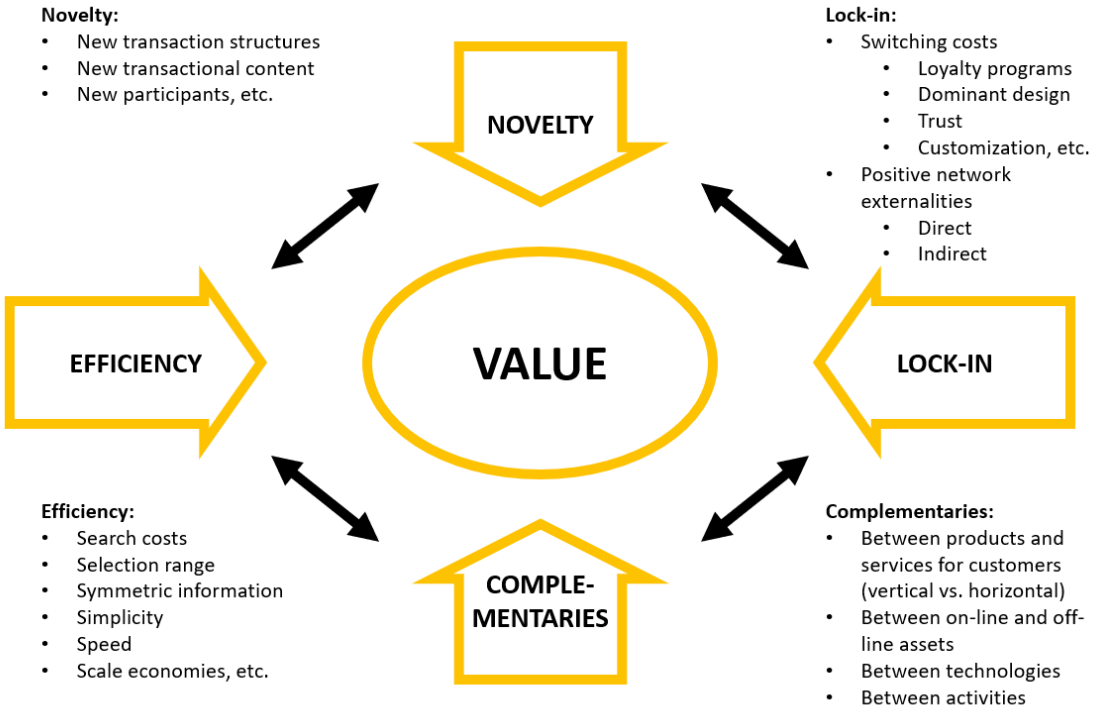

Figure 6 E-business and its sources of value creation. (Amit & Zott, 2001)

2.2.2 Business model canvas

A business model presents how the company structures its operations to propose a value for the consumers and how company captures part of that value to itself as a revenue. (Teece, 2010) Often the business models are complex and difficult to understand without visualization. To illustrate parts or causalities of business models researchers have designed diagrams, models, and canvases that make the issue more understandable. For example, the business model is often presented as a causal loop diagram or a business model canvas. The tools can be used to facilitate research or generate and innovate a organization's strategy in business. (Casadesus-Masanell & Ricart, 2010; Osterwalder & Pigneur, 2010)

The research of the paper utilizes Osterwalder and Pigneur's (2010) business model canvas to explain the current business model of online grocery stores. For that reason, one part of the theory section focuses on the business model canvas and its theory, which

support a reader to understand better the research to be discussed later. (Osterwalder & Pigneur, 2010)

Osterwalder and Pigneur (2010) created a business model canvas to be a assisting tool to describe the business strategy and model, and facilitate discussion of it. Business model canvas consists of nine parts that focus on customer segment, value propositions, explain how the company organize sale channels, customer relationships, resources, activities, partnerships, and figure out how the company generates revenue streams and manage its cost structure. These nine parts represent company's four main interests, which are company's infrastructure, financial viability, its customers and offerings. (Osterwalder & Pigneur, 2010)

Osterwalder and Pigneur's (2010) nine parts of the business model canvas:

Customer segments define the target customers whom the company tries to sell for. The company can group the customers in one or many segments based on customers' common needs, behaviors, or other attributes. When the target customers have been chosen the business model can be designed around the customer's specific needs. (Osterwalder & Pigneur, 2010)

Value propositions explain the created value for a specific customer segment that has been formed from products and services. A bundle can be varied but the total benefits for the customer decide the result where the customer buys. (Osterwalder & Pigneur, 2010)

Channels' main role is to deliver the value propositions for the customer. The channels represent a line between the organization and the customer. The right channels help companies to reach the customer and deliver the value proposition. (Osterwalder & Pigneur, 2010)

Customer relationships are categorized into types of relationships that decide how the company wants to interact with the specific customer segment. This block is crucial for the company's success because selected relationships need to respond to the customers' expectations. The company's relationships deeply affect to the company's customer satisfaction. (Osterwalder & Pigneur, 2010)

Revenue streams solve how the organization creates profit from each customer segment. The pricing mechanism can vary between various revenue streams. Selected streams influence how revenues are collected and how much revenue they form for the company. (Osterwalder & Pigneur, 2010)

Key resources are the main assets that the business model can work. It can be categorized as financial, physical, intellectual, or human. Key resources are targeted to answer how the value is delivered and captured. (Osterwalder & Pigneur, 2010)

Key activities focus on the operations that are crucial for the company's business. The operations can be, for example, production, and these are needed to ensure that value proposition is delivered for the customer. (Osterwalder & Pigneur, 2010)

Key partnerships consist of a network of suppliers and partners. These partnerships enable optimizing business, reducing risks, or acquiring resources and activities. (Osterwalder & Pigneur, 2010)

The **cost structure** is formed from all costs that the business model generates. The key resources, activities, and partnerships produce calculatable costs. Focusing on the cost structure company can make its business model cost-driven. The company can keep attention in the value-driven model when cost structure does not get relatively as much attention as cost-driven. (Osterwalder & Pigneur, 2010)

All these blocks attach to the canvas, which visualizes and facilitates the creating process of the business model. The Business Model Canvas is presented in figure 7.

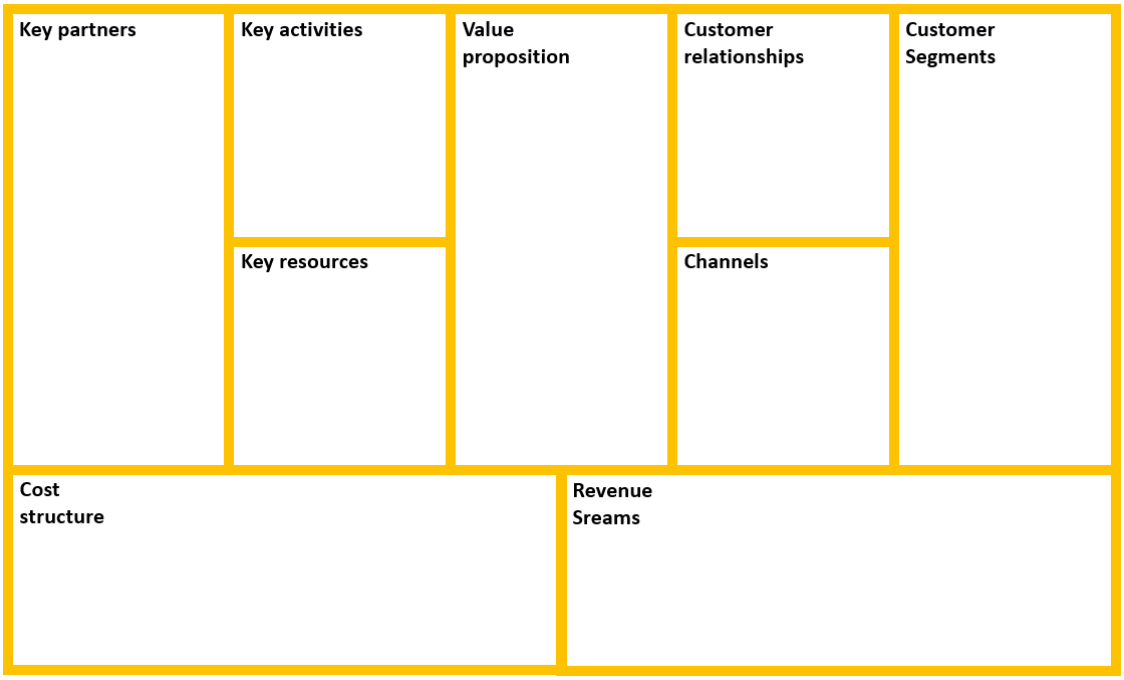

Figure 7 Osterwalder and Pigneur's business model canvas. (Osterwalder & Pigneur, 2010)

2.2.3 Online business models

The information technologies have increased the challenging business model issues because information and internet services are usually challenging to price and consumers have several ways to find similar product, service, or information. Several options affect customers' willingness to compare gained value before purchase. Major challenge is to find suitable price that people are ready to consider and pay. The suitable provision from a specific action is an important element in the information business model design. (Teece, 2010)

Virtual markets enable extremely broad markets for the companies when the transactions are conducted regardless of the location. This has been permitted by internet connections that have spread widely around the world. These virtual markets are focused

on providing a possibility for easy transaction and facilitate the purchase. Moreover, the high availability and fast speed information flow create a strength for the virtual markets. High availability broader the markets and number of customers that can purchase the company's products. The availability is not limited to the borders of the countries, instead, the virtual markets have unbelievable wide opportunities. (Amit & Zott, 2001)

Virtual markets accelerate the emergence of new solutions and commercial arrangements that disregard traditional boundaries in the value chain. The internet permits a massive amount of information for the customers and reorganizes the business models that disintegrate old business logic and disturb traditional industries. Simultaneously, the new ways of creating value for the customers open opportunities to form new connections between buyers and sellers in the markets. (Amit & Zott, 2001)

Additionally, the internet disrupts the boundaries of the different industries and enables crossing and combining value creation potential from several industries. The value chain is rapidly redefined when the customizable products and services are reformed by the internet. That may also affect the company's willingness to outsource the operations that expand the growing possibilities when the transaction costs decrease, and the company benefits from its scale size. (Amit & Zott, 2001)

A digital economy permits companies to experiment with novel business models and value generating mechanisms. The value can be generated by a company, multiple partners, and provided value for several customers. The value creation is usually considered to generate from the changes or insertions in the business model. However, the value can be also generated through a revolutionary business model that changes the way to think specific industry. Often, the novel and innovative business model modify the roles of suppliers, partners, and distribution channels. Furthermore, it can extend the resources of the company when the novel business model redefines the company. (Zott et al., 2011)

2.2.4 Central themes in business model theories

Even though the field of the business model theories are wide and there is no common sense of its definition, there is possibility to recognize central themes around the theory. These themes include strategical perspectives, business planning, value production, finding an advantage in competition, and innovation of new models. (Baden-Fuller & Morgan, 2010; Teece, 2010; Zott & Amit, 2007) The central themes of the business model research represent different views of the research field and this section sum up the most common perspectives that arise from the literature. Some central themes utilize the theoretical framework of value creation and capture while some focus on innovation and strategy planning such as Osterwalder and Pigneur's business model canvas. (Osterwalder & Pigneur, 2010) For that reason, many of these main themes have been presented earlier in this paper. This section emphasizes the central themes of business model research and summarizes the main themes in the business model field. A summary of the central themes in business model research is presented in the figure 8.

Firstly, many scholars seem to focus on **value creation** in business model theories. For organizations' operations, value creation leads to the actions and shows the direction of the organization in the future. (Teece, 2010; Zott et al., 2011) Second, **value capture** is linking to creating value. Still, value capture is a crucial component also on its own because it forces the company to consider how the revenue is produced and how to make revenue effectively. (Teece, 2010) Third, for some authors the business model theory represents a way of **strategic planning**. It facilitates the organization's perception of the operations and how the business should be developed in the future. (Doz & Kosonen, 2010) Fourth, the business model permits designing and creating new business. The theory can be seen also as a **tool** that enables creating of a new way to do business and creating value or finding weaknesses in the current model and develop a strategy to respond to customers' needs. (Doz & Kosonen, 2010; Osterwalder & Pigneur, 2010) Fifth, previously presented themes help to create a competitive advantage that is one of the main objectives when planning strategy. (Teece, 2010) Sixth, the business model theories provide a possibility to innovate strategy or business operations. The **innovation**s

permit value creation possibilities and new plausible revenue streams for the company. (Zott et al., 2011)

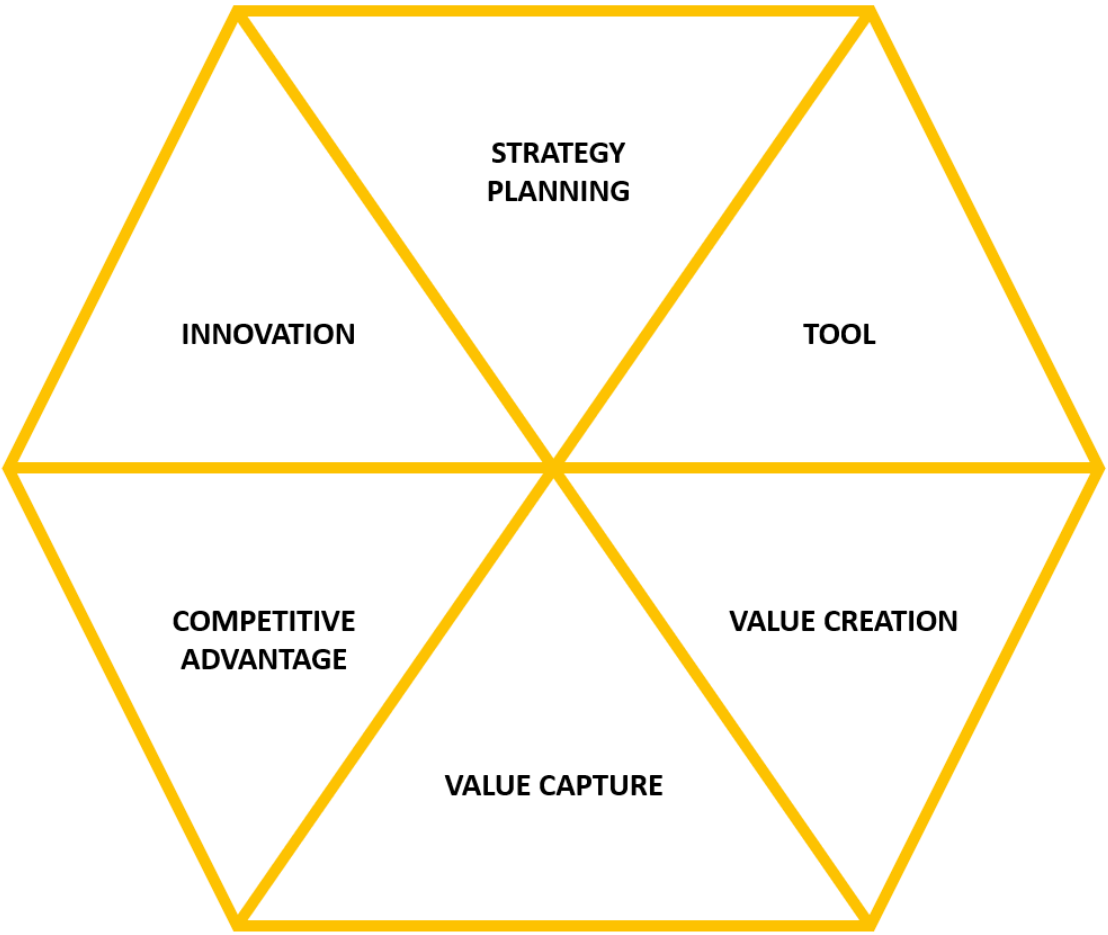

Figure 8 Central themes in business model research.

2.3 Synthesis – A framework to study

This section combines both theory areas; co-creation value and business model that are presented in the literature review. This section also introduces a model that can be utilized to examine a value co-creation in the online platforms business models, and the model is used in the empirical part of the thesis.

In the literature review, it is discussed that the value co-creation emphasizes importance of the interaction between a customer and a provider. The provider, often a company,

needs to focus on how it can develop suitable conditions for the interaction with a customer. The value co-creation and the value-in-use were selected as the focus of the thesis because the value co-creation is in major role in the online platforms' user experience. Also, online platforms have created innovative possibilities to develop interaction between the provider and customers, which creates new opportunities for the study. (Grönroos & Voima, 2013; Sawhney et al., 2005)

The research will utilize a theory of business model that simultaneously focus on value creation and value co-creation theory. Though the term 'value creation' has defined different way in the theory of value co-creation these two different perspectives complement each other and research of the thesis. The theory of the business model creates great lens to study how the food online sales business models enable the co-creating value with customers. (Grönroos & Gummerus, 2014; Zott & Amit, 2010)

In this thesis, the business model canvas has an important role. It facilitates visualization of the study and finds the business model areas where the value co-creation is possible to utilize. In addition, it permits to study food online sales business models and targets where co-creating value is possible. The focus in this thesis is on the areas where the best opportunities to create interaction between the providers and customers are. (Grönroos & Voima, 2013; Joyce & Paquin, 2016; Osterwalder & Pigneur, 2010)

Furthermore, the business model theory and business model canvas concentrate strongly on the provider side and how the value is provided for the customers. The value co-creation theory gives a broader perspective to this research when it includes the customers' generated value to the product or service and emphasis the value-in-use. (Grönroos, 2011; Osterwalder & Pigneur, 2010)

Combining business model theory and value co-creation theory is effortless because both theories study value creation from the different perspectives. On the other hand, the business model theory is broad, and there is no clear definition, which makes the

study more complicated. The study utilizes a business model canvas in the research, which provides a clear and understandable entity of the business model aspects. It also facilitates the observation from different perspectives. Moreover, it ensures that value co-creation opportunities are considered in all business model areas.

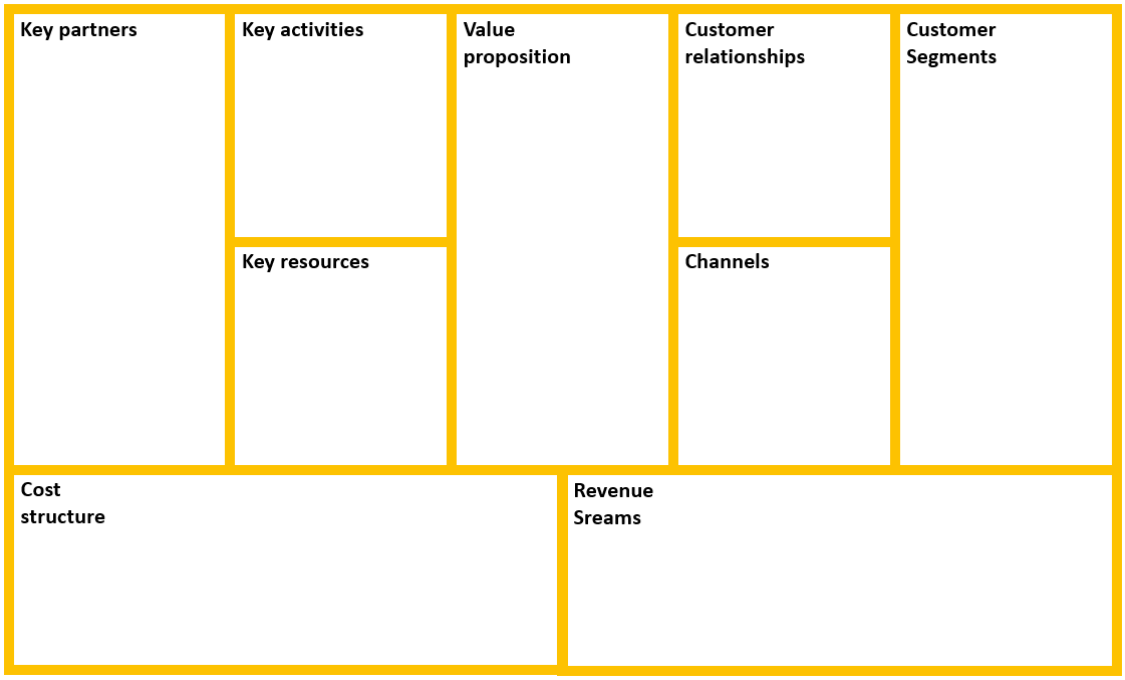

Figure 9 A model to study and analyze value co-creation practices in food online sales business model.

3 Methodology

This chapter illustrates the methodological choices of the study. The sections are formed from research strategy and method, case selection process, data collection, and data analysis. The research strategy and method, and case selection process sections explain how the research was planned and how the case was limited. Sections of data collection and analysis introduce the data collection process and analyzing methods. Furthermore, validity and reliability of the research are discussed at the end of the chapter. These explains what kind of efforts have been made to increase the validity and reliability of the research.

3.1 Research strategy and method

A case study permits us to focus on a contemporary phenomenon within real context and particularly in the case in which the boundaries between phenomenon and context are not noticeable. Because the phenomenon and context of the research are not always distinguishable in a real-life situation, the case study permits to collect unlimited amounts of data to analyze, for example, technical characteristics. In addition, the case study emerges technically distinguishable situations in which data points can be less than variables of interest. (Yin, 2003) The case study is a relevant method as a research strategy when the objective is to reach a comprehensive knowledge of the context of the research. The case study strategy is used to answers the questions “why?” as well as “what?” and “how?”. Therefore, case study strategies are utilized in exploratory and explanatory research. Interviews and observation are usually utilized in this type of research but also documentary analysis, and questionnaires are common methods. (Saunders et al., 2012)

The case study can be categorized into two different designs that are single- and multiple-case studies. This thesis utilizes the multiple-case study as a research design because it enables broader research and results than a single-case study. In the multiple-case study, the research studies two or more cases that permit varied circumstances but offer

a common conclusion and expand the generalizability of the research findings. (Yin, 2003) This research studies online food sellers which have many implementations. Various companies sell food online, and the used online platforms and business models vary between different companies. For this reason, it seems obvious to use the multiple-case study to observe generalizable results from this specific field. The multiple-case study allows us to study individual cases, offers comprehensive results and at same time observe similarities between the cases. For that reason, a multiple-case study is a natural choice as the research strategy of this research.

The methods in research are divided into quantitative, qualitative, and multiple methods. Quantitative research focuses on collecting numeric data, and often the term "quantitative" means any data collecting technique or data analysis procedure that utilizes numerical data. The qualitative research concentrates on other type of data such as interviews and data categorizing. In practice, these two methods are often combined in business and management research designs. (Saunders et al., 2012)

In a research, there can be used primary and secondary data. The collecting process of primary data is implemented by the researcher and it focuses especially on collecting data for the on-going research. The secondary data utilizes data collections that are collected previously for other use. The previously collected data can be further analyzed to provide broader knowledge, interpretations, or conclusions. (Saunders et al., 2012) Primary data is used in this thesis, and the data was collected by semi-structured interviews.

A semi-structured interview as a research method provides an opportunity to infer causal relationships between variables and to undertake an exploratory study. The semi-structured interviews enable depth data collection since the researcher can interact with interviewees. This type of interview provides a natural flow of discussion that may affect the order and wording of the questions but allows a way to collect the data. The interaction also may increase the understanding of the issue that research had not previously considered. Additionally, the semi-structured interviews prefer complex and open-

ended questions because those provide the opportunity to explain answers for the researcher.

3.2 Case selection process

The research focuses on the Finnish food market. The selection of the case companies is based on few requirements: the company sells food online in Finland on its online platform, or it develops digital and automated solutions. Furthermore, to ensure comprehensive research, all selected case companies have different backgrounds, and they offer perspectives to provide value for the customers.

Four case companies were studied in this research. Two of the case companies have their own webstores, and they offer delivery services. Two other case companies develop digital and automated solutions and have significant knowledge from the development process. The first company represents a webstore, which main business is in grocery stores, and they are slowly begun to sell online similar items as local grocery stores. The selected case company, S-ryhmä, has stores all around Finland, and their online store delivers food to homes in major Finnish cities. The second company represents a smaller delivery business that offers delivery service for restaurant food. The main customer segment consists of retirees. Customer can choose a restaurant and meal from several options, and the company delivers the ordered meal to the customer. The selected case company is Edwarton Oy, which operates in regions of Kuopio. Their brand is called Kunnon kotiruoka, and the application's name is Ruokis. The third and fourth companies are developers of digital and automated solutions. They run development projects for the companies and solve their specific problems. The main objective is to facilitate and improve customers business efficiency with robots, automation, and digital solutions. These two case companies are Jubic and Soficta. Jubic's office locates in Vaasa, but their projects and customers are all over Finland. Soficta's office is in Salo, and their projects as well depend on the customers' locations.

3.3 Data collection

Data collection was implemented as semi-structured one-on-one interviews. Two interviews were conducted for each company, and in each interview a different professional was interviewed. Interviewees represented selected case companies, and altogether six interviews were conducted for one month. All interviewees have 3-7 years of experience in their company and have a strong understanding of their business area. All interviewed professionals are working in a significant role in their company, which enabled a front row view of the industry.

The interviews were conducted by phone calls because of the current situation with the COVID-19 virus, which did not permit to arrange meetings face-to-face. The length of the interviews varied between 28 to 45 minutes and on average time was 35 minutes and 40 seconds. More detailed information from the interviews is described in Table 3. The interviews were first recorded and later transcribed accordingly by the researcher. The interviews were conducted in Finnish as it was the native language for all interviewees and interviewer. Quotes in the section of findings are translated into English by the author.

Table 3 Details of interviews

Interviewee	Date	Case	Length of the interview
1	3.12.2020	S-ryhmä	35 min
2	4.12.2020	S-ryhmä	36 min
3	26.11.2020	Edwarton Oy	28 min
4	27.11.2020	Jubic Oy	45 min
5	27.11.2020	Jubic Oy	42 min
6	26.11.2020	Soficta Oy	28 min

The interviews followed the semi-structured set of questions, which ensured that all the relevant topics were discussed with interviewees, and it permitted comprehensive answers and proper data collection during the interviews. Still, all interviewees did not answer the same set of questions, and the order varied between interviewees. Mostly this depended on the length of the answer of the interviewees, and the fact that they also might have answered already on the next question. Furthermore, in Jubic's and Soficta's interviews, the questions emphasized more technological perspectives that enabled a broader perspective for the study. The set of questions are presented in appendix 1.

3.4 Data analysis

In this thesis, data analysis utilized two analyzing methods. All four cases were analyzed by a within-case method that permits us to familiarize all cases one by one. The within-case analysis facilitates the research and analyzing process when every case is analyzed as an own entity. The own entity permits a deeper and more detailed analysis in a single case, and opportunities for broader findings. The broader understanding of all cases facilitates the cross-case analysis when all interviews are presented and analyzed case by case. In addition, the within-case analysis possibly accelerates the cross-case analysis when all the cases are already familiar and key findings of the cases can be compared efficiently to each other. (Eisenhardt, 1989)

The within-case analyses of the four cases are based on the interviews. Collected data from each case is combined and structured to facilitate analysis. First, the interviews were analyzed, and then from the data were identified and measured requirements that could not be implemented without the services and their business models. From the data of the cases, were defined and developed the potential for the value co-creation. Analysis progresses case by case and analyses are supported by the relevant quotes. The quotes are highlighted in the text, and those were placed under each paragraph to support findings. At the end of each within-case analysis is presented case-specific business model canvas that is filled with the findings. An empty business model canvas is provided in figure 9. The main aim of the study is not to fill all the parts of the business model

canvas. Instead, the aim is to find the most potential parts for value co-creation. All the within-case analyses are executed the same way in this study.

The section of cross-case analysis follows the within-case analysis, which highlights findings and try to recognize common practices from the cases. These common practices are reflected in the theory of value co-creation that enables discussion between theory and practices. The purpose of the cross-case analysis is to find concrete opportunities for value co-creation.

3.5 Validity and reliability

The validity and reliability of the research has a significant role in forming the quality of the research. The validity of the research ensures that research measures what is intended to assess and analyzed data can be generalized to other relevant settings or group. Reliability in the research ensures that the research is repeatable by other researchers, and the research process is clear and transparent. The findings and conclusion of reliable research should be possible to repeat with the same study methods. (Saunders et al., 2012)

The reliability is challenging to confirm in the research that utilizes semi-structured interviews since it represents only the moment when the interviews are conducted. For that reason, the time threats the reliability of this study. Data of this research is possible to be repeated only for a short period of time. Though, the reliability of this research can be increased by the transparency of the study methods, detailed transcripts of the interviews, and a elaborate description of the data collection and analyzing process. (Saunders et al., 2012)

The validity of the research is achieved with a scope of clarifying questions, ensured meanings, and exploring the issue from various perspectives. (Saunders et al., 2012) In the case of studies, external validity is difficult to ensure because of its weak basis for generalizing. Still, some particular set of results can be generalized to the theory of

online platforms value co-creation. (Yin, 2003) It can be considered that the result of the study is to generalize, for a certain extent, Finnish online food sellers who do business in Finnish markets and utilizes online platforms in their selling process. The study is not generalizable to foreign markets, other products than food, or other business models than the online business model.

4 Findings

This section of the thesis presents the findings of the empirical study. First, there is presented the case context of the study. Then in the second part are presented within-case description and analysis, in which the cases are analyzed separately. And after within-case analysis, all cases are analyzed in the cross-case analysis. The end of the section introduces a summary of the results.

4.1 Case context

The study focused on the companies that operate in the food industry and/or develop digital solutions to improve the sale or delivery for the customer. In two study cases, the company has its own webstore or application, which they use to sell food or/and deliver services. The other two case companies are IT-developing companies that have knowledge from automation, webstores, digitalization, IoT, and robotization. The purpose of the interviews was to collect knowledge and information from many different perspectives. It would not have been possible if the companies had operated in the exact same business area. Moreover, the focus of the study is on food that requires specific conditions, and the delivery creates more challenges. Similar value co-creation potential can also occur in regular webstores, but the results and analysis of the study concentrates mainly on the online food solutions and notices their special characters.

4.2 Within-case description and analysis

4.2.1 Case S-ryhmä

S-ryhmä is Finnish daily consumer goods selling group, which consists of 19 local cooperative stores around Finland. All cooperative stores operate as individual companies and are responsible for business in their area. Above the cooperatives is SOK, which is responsible for business and brand development. Furthermore, web-store development is concentrated on SOK which ensures cost efficiency and similar service experience in different locations. SOK has the second most extensive order, delivery, and pick-up

network in Finland after Kesko. Delivery and pick-up services are currently operating mainly in major cities, but there are also some exceptions.

Identifying and measuring requirements

The business model of a webstore has requirements that permit a base for the business. It is relevant to realize the requirement for basic core elements before the possibility to concentrate on value co-creation. Generating value is challenging if the customers do not have access to the service or are unable to use it. It leads to a situation, in which the value co-creation potential never exists. The development process of the web store is time-consuming, and only core operations can require remarkable investments. Additionally, consumers´ habits need to evolve, and there must be a demand and need for the service.

> *It is good to note that the web store is a quite new sales channel that has been developed for a long period. The development of the current web store begun between 2010 and 2011. Some experiments were tested already in 1998, but the environment and customers were not ready yet. The new path has had a better start when telecommunication and smartphones became increasingly common and enabled the effortless usage of web stores. (Interviewee 2)*

Infrastructure and telecommunication have a crucial role, in determining the possibilities for the orders and deliveries. Customers must have an easy access to web store, and the order should be delivered in a reasonable time. Even though it is possible for infrastructure and technology to evolve, it does not correlate directly with the profitability of the webstore. The logistics cause a major challenge for Finnish food web stores because distances are long, and deliveries are often unprofitable. The remarkable challenge is to develop a business model that can offer an efficient and cost-effective solution in a sparsely populated country.

Logistically, Finland is a challenging country when you are considering final delivery for the consumers. The webstore could be considered with simplified features in sparely populated locations. For example, delivery could be operated once a week or S-market could deliver webstore orders alongside the regular business in small villages. (Interviewee 2)

Long distances also generate other challenges for business operations. Even though the food webstore is available in any location where a device can be connected to the internet, the delivery process creates huge challenges. The number of service users must reach the determined level so that orders can be delivered efficiently, and the business can be profitable. For that reason, at the current moment availability of food delivery services is mostly located in major cities. Furthermore, the food webstore needs to offer a comprehensive selection of goods for the customers, to provide an effortless and valuable customer experience. The webstore services are competing simultaneously with ordinary food stores, and for that reason, customer service must offer extra value for the customers so that they are willing to pay more. For a similar reason, it can be demanding for new entrants to enter markets when established operators have a huge advantage with their selections.

The capital area in Finland is totally on its own level compared to the other parts of the country. In general, the major cities lead the way and markets will increase strongly in these areas. (Interviewee 1)

Traffic jams and driving time reflect significantly on how often customers choose a delivery option. In the capital area, delivery saves time and effort and creates value for the customer. In other parts of the country, cars are more common and driving effortless, which decreases the need and benefit of the delivery. (Interviewee 2)

Demand for digital services is increasing, and changes are possible to see already in various industries. In addition, customers are more willing to use digital services in their

daily life. Still, the changes in customers' habits are relatively slow, and it decelerates the company's return on investment. For that reason, the financial balance of the company must be stable, so that the company can operate an unprofitable business for a long term before operations turn profitable.

> *A network of grocery stores that offer the possibility to order ingredients via web-store has expanded exponentially. 37 stores were part of the network in 2019. In 2020, the number increased to over 90 stores. The expansion has focused mainly on major cities, but there are also a couple of exceptions. (Interviewee 1)*

Still, the food webstore seems to heavily need regular grocery store to operate ware-housing and distribution. The demand for foods that can be bought online is increasing, but businesses cannot yet operate profitably alone. The advancement of the food web-store also faces a paradox of supply and demand. The company is not profitable to invest in supply, because there is not enough demand, and on the other hand, customers could create demand, but there is no provider that offer supply. From the financial perspective, it seems that food webstores will be operated alongside the ordinary grocery stores for a while.

> *Customers' needs influence where the company decides to offer its service, but demand is the crucial factor that decides where the business can implement and stay. In the long-term, the service area will expand anyway. Primarily, we must develop a service that will have a demand, and then we can enlarge to the new markets in the future. (Interviewee 1)*

> *Possibility to order food centralizes in general to the cities, some small regions also offer these services. In cities, Prisma stores can serve a large number of customers and thus enable comprehensive selection of goods in the web-store. (Interviewee 2)*

Consumers are more aware of digital solutions and are more willing to utilize new applications. Still, customer experience is in a crucial role so that the webstores can become increasingly common and part of daily usage. The successful delivery and positive experience ensure that the customer is willing to pay again and maybe more when a testing experience is successful.

Defining and developing value co-creation potential

There is potential to define multiple value co-creation opportunities in S-ryhmä´s food webstores. The customers can interact in several ways and affect the order and delivery. However, it is important to note that, in an ideal case, the order can be delivered without human contact and mistakes. For this reason, interaction between customer and company and opportunities for value co-creation do not occur because the order is delivered as it is planned. The most significant value for the customer consists simplicity and efficiency, that customers co-create when buying food from the webstore.

> *First, a customer needs to find the webstore and make an order. When the customer has accomplished the order and bought the products, the supply chain can be quite long before the customer has a role again. (Interviewee 1)*

However, the start of the order process is one of the most potential points to co-create value when the customer can collect items freely from the webstore at home and get ordered items directly delivered to the home door. Developing the opportunity for value co-creation in webstores requires interaction with the customer and responding to the customer's needs. For example, expectations of the food's quality or features can vary hugely depending on the customer´s preference. For that reason, S-ryhmä has added a feature in their webstore that permits a customer to add a product-specific note, in which the customer can wish for certain features from the item. The opportunity to choose and affect selected items increases the customers' value co-creation potential when an interaction is permitted.

A customer can leave the product-specific message for the collector, and the collector tries to consider the notes the best way they can. (Interviewee 2)

When studying more closely the order process of S-ryhmä, there can be seen potential to add value co-creation. In S-ryhmä´s webstore, the customer can make changes in their orders until the items are collected. The flexibility facilitates the customer options to change ingredients and add new items. This feature enables to increase the value co-creation potential in webstore because it gives more time for the customer to interact with the store and thus increase the value co-creation potential.

The customer has the possibility to make changes to the order until the products have been started to collect. This enables that the order can be edited quite long before the order has been delivered. Furthermore, the collector can ask to amplify the order or recheck the items if there are plausible mistakes, for example, many same ingredients. The main reason is that our store tries to avoid accidents in delivery. (Interviewee 1)

The elaboration or recheck of the order generates co-creation value for the customer when the plausible mistakes can be avoided beforehand and both the customer and webstore benefit from the interaction during the collecting process. However, it is important to notice that during the process mistakes can be made and the failed order needs to be fixed.

In the situation, in which a customer has chosen a pickup option for the order. The customer can make changes in their order even upon the order pickup or contact customer service and ask for changes or refund for the products. (Interviewee 1)

Customer service has a significant role as a value co-creation provider in the situation, in which the delivery has not to succeeded. Even though digitalization facilitates everyday

life, an extensive challenge is to solve, how online platforms can solve the mistakes it has made. Currently, a human is enormously efficient to resolve unclear situations and mistakes when comparing to computers. Decision-making and problem-solving correctly produce immense challenges for artificial intelligence. Additionally, a customer can face technical problems that technology cannot solve.

> *For example, customer service can get a call that the locker door is jammed and ordered ingredients are still inside. (Interviewee 2)*

The value co-creation in these situations is enormously challenging to create between webstore and customers. The value seems to be co-created between customer service and customer. However, the development of digital customer service, such as chatbots, is ongoing. It is still notable that chatbots and other digital assistants will work alongside humans for a long time before they can solve the most difficult cases. Until then, the chatbot's main tasks will focus on helping the customers to find information, answer basic questions, and categorize questions for the right expert.

> *Chat has become increasingly common, and in 2019, it was able to solve over 100 000 customers' questions. And the utilization degree will rise in the future. (Interviewee 2)*

The customer´s expectation for the order and service settle high when they cannot pick up the actual ingredients themselves and check the quality. For that reason, one potential value co-creation is the reclamation process, in which the customer and the company can interact and create a mutually satisfactory outcome. From the customer's perspective, the reclamation process should provide be as effortless as possible so that negative customer experience can be turned into a positive outcome. Reclamation channel is easy to create digitally, but decision-making is more challenging. This affects the processing times when people need to handle the process.

The customer can fill the reclamation in the mobile app, or they can contact the customer service. These mistakes are impossible to avoid entirely, so these happen occasionally. (Interviewee 1)

There is still a need to use humans in the reclamation process, but this is a potential target for development, and digital solutions could manage significantly more cases. (interviewee 2)

The webstore development has remarkable value co-creation potential if the customers could interact with a development team, and the company could get straight feedback from the customer. The interaction is possible to implement with pilot projects, in which customers take a tester role. The pilot customers can increase the value co-creation in pilot projects with suggestions for the development team, which permit developing a more functional webstore. The pilot projects can give considerable advantage for the company when it can improve the webstore in a more customer-oriented way and solve the customers' real needs.

S-ryhmä works closely with the customers, and in all activities, the customer is involved. Furthermore, we have increased the number of service design professionals, and we are willing to improve the customer experience. Pilot projects are mainly used in the prototype of a new service, or our service designers utilized them when they test the novel solutions. Our Facebook group has 1 000 members, in which we can test our ideas, pilot services, and ask for feedback. (interviewee 2)

Pilot projects facilitate the value co-creation with the customers but also enable new possibilities to co-create value. The new solutions and mode of operations permit the customers to use and interact in novel ways with the company and co-create value. With the new features, the customers and company can find new links, which permit the potential for co-creation.

> *For example, we are piloting a smart shopping list in foodie.fi webstore. If the customer has used a bonus reward card or webstore, the shopping history can be brought to the customer's view. The webstore can recommend the most common products that are based on the customer's previous purchases. Furthermore, it recommends some specific products less frequently and tries to predict the time to offer the right product, for example, shampoos, etc. (interviewee 2)*

Predictability brings a novel perspective to the value co-creation, in which the customer can effortlessly benefit from the proposition and get personal discounts that base on the previous purchases. The shopping experience will improve, and the customers can save time when items are uncomplicated to pick, and they get a more personal service. If the customer can edit the proposition, it enables a remarkable potential for value co-creation. Moreover, the customization permits that the value co-creation is formed between the customer and webstore, which represents a new way to create value without an actual person representing the company.

From the S-ryhmä case there can be separated multiple possibilities for value co-creation. The potential value co-creation locations in the business model canvas are presented in figure 10.

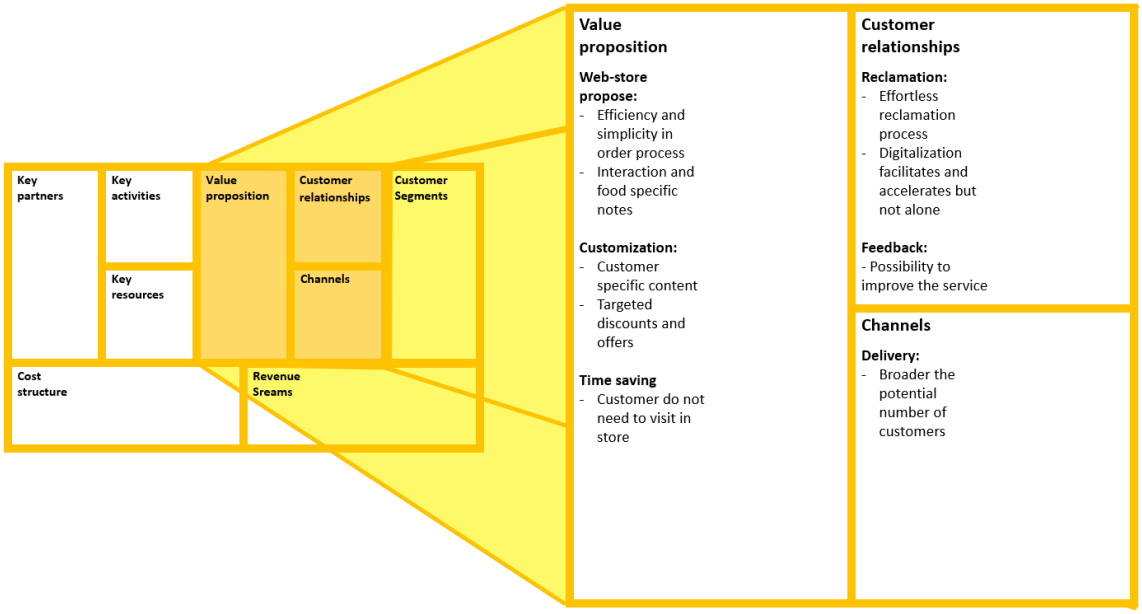

Figure 10 Value co-creation potential in case S-ryhmä.

4.2.2 Case Edwarton

Edwarton Oy is a company that offers services for ordering food and delivering it to the customers' home in the Kuopio area, Finland. The service is better known as Kunnon kotiruoka and the application is called Ruokis. Kunnon kotiruoka enables customer to choose and order lunch from a restaurant and then they deliver the food to the customer three times a week. The minimum order is two portions per delivery. Kunnon kotiruoka also offers an application for the customers that makes choosing restaurant and ordering foods effortless. Orders can be done completely through the app for the customer itself or the customer can order food for example for their retired parents, as a domiciliary care.

Identifying and measuring requirements

Ruokis is a solution that concentrates on delivering food mostly for retirees, whose capability to cook or utilize restaurants is weakened. The customer segment is carefully considered, even though other customers can also utilize the service. Ruokis deliver the meals based on the orders that have been made earlier. The service does not permit fast deliveries, and for that reason, the customer needs to know how often they like to eat

restaurant food. Furthermore, the customer must order several meals simultaneously, and several times a week. That means this type of service is not capable of serve a single order.

> *The customer makes monthly based order, and we deliver food to them. The customer can choose meals from the menu in the application weekly, and the restaurant prepares the meal, then we deliver it on the wished day. (Interviewee 3)*

The restaurant always plans the meals several weeks ahead, and the customer can choose from a couple of options. It is still important to notice that the selection of foods is limited per day, and for that reason, flexibility to choose enjoyable meal may be challenging. In this kind of situation, the value co-creation potential can also decrease because the customer's ability to interact is restricted. However, the application gives the possibility to choose from a couple of options that are, in many cases, enough, especially when considering retirees.

> *All the restaurants can be found on the map, and the customer can choose the restaurant, from which they are ready to order. Then they choose the meals from the restaurant's menu. (Interviewee 3)*

It is necessary to notice that Ruokis requires predictability in its operations. Predictability ensures that deliveries can be distributed in time when delivery routes are planned efficiently. Additionally, continuous deliveries reduce the possibility of mistakes when delivery destinations are familiar and do not change continually. However, predictability negatively affects flexibility when the orders must be made earlier than an hour before eating.

> *Delivery days are possible to choose and change. Customers can decide specific delivery days, but last-minute changes are challenging for us. For example, the meals are already packed in the restaurants, and changes cause extra work. (Interviewee 3)*

The profitability of the application depends on the number of deliveries because the company operates the distribution itself. The logistics cause a significant part of the cost and, for that reason, there must be enough customers to ensure profitable business. The distribution area is in a crucial role when managing profitability and logistic efficiency. The application requires exact limitations when the deliveries can be operated with a positive income. Meantime, the application must enable a broad area to ensure enough customers for deliveries and expansion of the business.

> *Restaurant prices the meals, and Ruokis takes a commission from each delivery. In a small locality, it requires about ten customers so that delivery can be profitable. (Interviewee 3)*

In many online platforms, the idea is that the user can use the application or webstore and make the order. In this case, the target group is retirees that may not have the capability to use the internet. The application requires an user who makes an order and tells where the meal should be delivered. In Ruokis's case, if the customer cannot make the order themselves, a relative can do it for them. That permits an opportunity to ensure that retiree gets a daily meal and can stay at own home for longer.

> *In many cases, a relative makes an order anyway so this will facilitate their order process. The customer can make the order also by a phone call, which ensures everybody has an opportunity to use the service. (Interviewee 3)*

Defining and developing value co-creation potential

The number of retirees is increasing in Finland, and as well demand for food deliveries will expand. The food deliveries are managed in many ways depending on the management of the city and its methods. In several cases, meals are delivered from the city's own kitchens. For example, meals are prepared and packed in the school's kitchen and then delivered to the customer. The customer cannot choose the meal or the restaurant.

From this perspective, Ruokis offers considerably more options for the customer, who can choose the restaurant, and meals from several options. Ruokis application permits a significant value co-creation potential when comparing alternative options.

> *The range of options is quite broad, which enables the customer to choose from many options. For the customer, there should always be something pleasant to eat from these options. (Interviewee 3)*

Ruokis application focus mainly on facilitating the order and delivery process. The interaction in other circumstances is minor and for that reason, the feedback channels create an opportunity for value co-creation even though those channels are not directly linked in the platform. The feedback of the customers is in a crucial role when developing the service and the application. In Ruokis case, the application development has just begun, and the feedback channel is not the first target to improve. However, from a value co-creation perspective, the interaction permits benefits for the company and the customers.

> *We are going to develop a feedback channel further so that we can foster the development of the application. Furthermore, we will improve interaction in our social media channels. (Interviewee 3)*

In this solution, the food quality is in a significant role when delivering value for the customer. The responsibility of the damages during the deliveries obviously is on Ruokis. However, the application is not responsible for the taste or quality of ingredients, but on the other hand, the food represents part of its brand. To avoid possible harm to the image and reputation, the company needs to have strong confidence on their partners in cooperation. On the other hand, Ruokis is not responsible for the low food quality or condition of it if customers want to make a reclamation. The customer contacts the restaurant directly, which saves time for the company that, in any case, should handle the reclamation with the restaurant. However, the customer needs to have a possibility to

make a reclamation or give feedback straight for the company so that value co-creation is possible.

> *The service is not responsible for the food quality. Instead, that responsibility is on the restaurant. The reclamation is made for the restaurant that makes a plausible refund for the customer. That is possible because the customer pays directly for the restaurant with a monthly invoice. There is no cash flow in the application. We charge the restaurant based on the actual deliveries. (Interviewee 3)*

Even though Edwarton does not manage the reclamation process and the interaction via application is minor, there is still potential to perceive a value co-creation. Ruokis enables to choose from several restaurants, which expand customer's options to get a tasty meal. Moreover, the service has one significant advantage compared to many other delivery services. Employees are trained to work with older people which creates trust for relatives. The employees can deliver the food directly to the customer's kitchen or fridge. The humane service and idea behind the application permit considerable value co-creation potential that the bigger businesses cannot achieve.

From the Edwarton case there can be separated multiple possibilities for value co-creation. The potential value co-creation locations in the business model canvas are presented in figure 11.

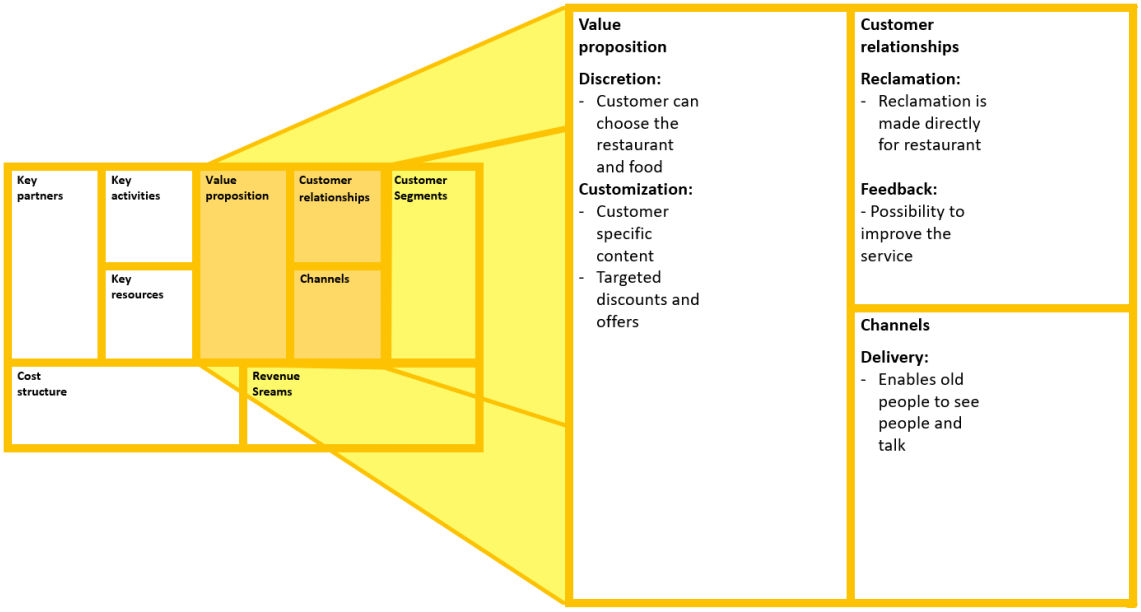

Figure 11 Value co-creation potential in case Edwarton.

4.2.3 Case Jubic

Jubic Oy operates as an IT-partner for other companies and builds tailored digital solutions. They also give consultation in digital development processes and software development. Jubic serves mainly in the manufacturing industry, in which they streamline operations and automate production so that customer companies can make their business more profitable.

Identifying and measuring requirements

In this context, it is significant to notice that Jubic is a developer of the digital solutions. The different interviewees for this thesis enable variation into perspective and the study. In Jubic's projects, they see how much effort it takes to develop a well-operating system. They know what is plausible and efficient to implement. The technological perspective permits us to observe digital solutions from another perspective and see how digitalization evolves in the future. In addition, it reveals requirements, which are impossible to consider if looking only at the business side.

When planning the digital solutions in which automation is included the development faces several challenges. The automation requires accurate conditions so that it can work properly. For that reason, it is a faraway idea that the order from the webstore could be managed entirely without humans. Especially when it comes to foods and their ingredients that require special conditions because of the preservation of the food. Additionally, automation development needs to consider, for example, that the package size may vary, and it can cause problems for the automation.

> *Of course, the objective is to develop as automated system as possible, for example, to manage storage. However, conditions and money set the limits on what is profitable to implement. (Interviewee 5)*

> *For example, filling the truck's trunk is challenging for the robot because the conditions and the location can change whenever the truck is in the loading dock. (Interviewee 4)*

When considering the business model in which the regular grocery store and webstore are combined, the fully automated solution is extremely challenging to implement. Human is multiple times more efficient than a robot and can conduct complex tasks in changing environments. For that reason, the possibility to create a completely autonomous solution is far in the future. And consequently, the employees will be have a significant part in the buying process and webstore solution. However, automation can facilitate and accelerate the process, which enables more efficient business.

> *The self-service cash deck increases efficiency multiple times compared to the solution in which robot replace the human and start to fill the shelves. (Interviewee 5)*

When considering the possibility for entirely automated solutions, one major issue is accidents and exceptions. The challenge is how automation could solve these problems. At the current moment, no solution can inform about the problem and then solve the

problem without humans. Automation should observe the mistakes or, for example, broken items. Furthermore, solving the problem is extremely difficult when the automation should know where to order compensatory items to replace the ruptured items. Mainly, the customer service situation is overly complex for automation, and for that reason, it can only help in the process and give common pieces of advice.

> *Noticing exceptions is challenging for the automation. For example, how the mistake is reported into the system, who replaces the broken item, how to know what items are missing, and where to get compensatory items. The automation facilitates the process when considering orders of a large number of products. In small cases, the benefits are infinitesimally small. (Interviewee 4)*

Automation works mainly as an invisible part for the end customer, and then value co-creation can be challenging to implement. However, automated solutions can be utilized in webstore and then enable the potential for value co-creation. It is relatively simple to create a webstore that can follow the customer's activity on the website. Utilizing this data permits to offer specific content for the customer, and recommend products that might be interesting to them. Moreover, it is possible to collect and add data from other sources, from bonus reward cards for an instant. System collects data about the interest of the customer, and in this way creates specific content for the customer. This also enables giving discounts and other offers personally to the loyal customer.

> *It is simple to build systems that create customer-specific content, but the results depend on how much data can be collected from the customer and thus utilize in the placement of the products on the web-store. (Interviewee 5)*

Defining and developing value co-creation potential

The customer-specific content permits significant value co-creation potential, especially in a situation, in which they can affect the order of products on the webstore. The compliant content facilitates customer to find the right items efficiently and quickly so that

it provides value without any employee touch the system. When the shopping experience is improving, customer is more ready to use the service again and the webstore can recommend products that customers did not even consider to buy but collect them to the digital shopping cart as an impulse purchase.

> *The data plays a remarkable role, and a lot depends on how specific and accurate the content is on the webstore. (Interviewee 4)*

There is a lot of things to improve in the webstore and its operations. For that reason, company needs to consider, what are the development points that regenerate the business significantly. According to Jubic, in most cases, companies gets most of its benefits from focusing on the usual improvements and ensuring a well-operating system. If the lack of a system can be avoided, it improves the value generation considerably more than automation can provide with little changes.

> *The main challenges for the companies are commonly the same. With the basic improvements, we can get remarkable results. For example, company has some system to manage customer data. The basics must be found before focusing on smaller details. (Interviewee 4)*

A digital solution can assist the customer find the correct product or help in other issues. Chatbots have become increasingly common on websites, and those can include significant value co-creation potential. Chatbots can be available 24-hour and assist the customer. The advantage of the chatbot is based on its ability to solve simple problems and guide customers to find the right information. It saves employees resources and gives them time to concentrate on more challenging cases. Reclamation processes are still demanding for the chatbot to handle because it requires decision-making that includes many variables. For that reason, chatbot cannot fully replace the customer advisor in their job. However, the chatbot enables a digital value co-creation potential for the customer, which is possible to utilize at any time.

Chatbot can help the customer in the beginning and offer FAQ answers for common questions. Furthermore, it can assist collecting feedback from the customers but it cannot make decisions, and in these situations chatbot requires help from people. (Interviewee 5)

In addition, technology can facilitate a company's inventory and order process that ensures an adequate number of items. When the items are mostly available, customer satisfaction increases, and they do not need to search for products from other sources. The automation ensures that there is no lack of storage, which provides value co-creation when the webstore can respond to the demand.

For example in stores they can utilize technology to assist orders. If the number of the products decreases, automation would automatically order more of the same products. (Interviewee 5)

From the Jubic case there can be separated multiple possibilities for value co-creation. The potential value co-creation locations in the business model canvas are presented in figure 12.

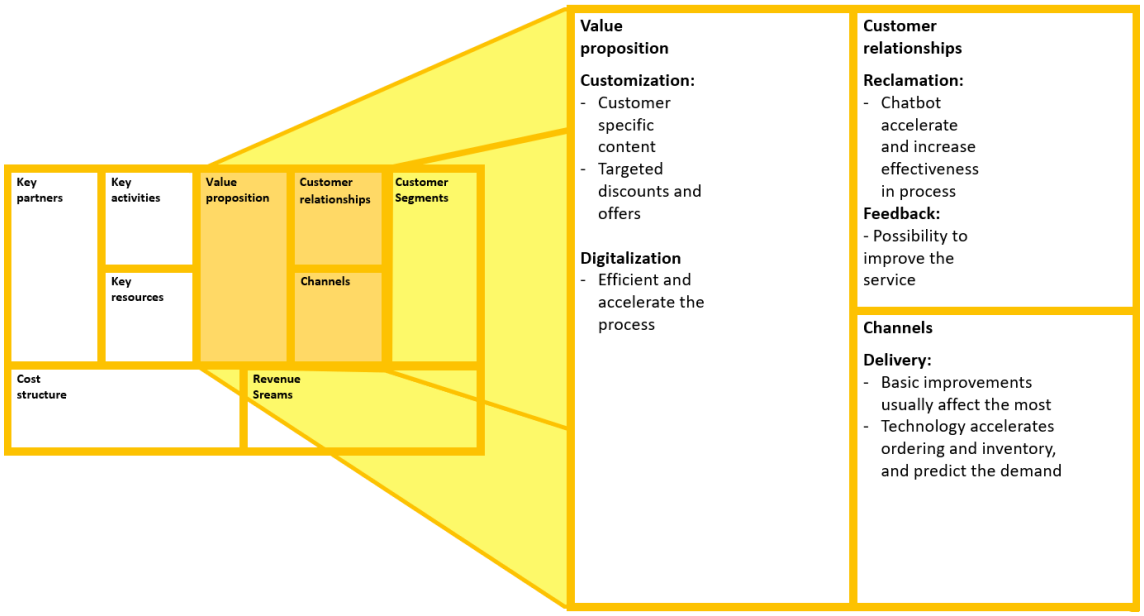

Figure 12 Value co-creation potential in case Jubic.

4.2.4 Case Soficta

Soficta Oy plans and builds software solutions for companies, which improve their operation and possibilities to work more efficiently. Soficta also creates IoT and industrial internet solutions for their customers and enables them to bring smart features to the machines. The main business focuses on creating solutions that facilitate the company's and employees' work.

Identifying and measuring requirements

The one major problem in food online platforms and webstores is logistics, which causes remarkable costs for the company. In addition, it is challenging to implement efficiently, especially in Finland, in which distances are long. Another challenge comes from the changing conditions of for example the surroundings where automation is used. This complicates the possibilities of artificial intelligence to operate correctly and finish the tasks. Thus, a fully automated supply chain is extremely challenging to implement, and human will be a considerable part of the chain.

On a Finnish scale, it is challenging to remove the human from the equation. Human is still extremely versatile and can execute various situations relatively efficient compared to the machine. (Interviewee 6)

The webstore business requires people to collect and deliver products and handle the feedback and reclamations. Automation and robots can operate as parts of these tasks but cannot compete against people's versatility. Companies must consider and calculate the costs of both options to get the best result. However, it seems that robot assistance will become increasingly common in business.

Versatility is emphasized when comparing humans and robots. "Man in the middle" is a significant part of the delivery. (Interviewee 6)

Automation is relatively easy to develop when the size, shape, weight, and material of the packages are kept similar. The development of the functional automation or system becomes challenging when the number of different packages increases. The number of possibilities multiplies the potential problems that the robot should consider and solve. If the packages can be similar, then the system could work comprehensively, and the plausibility of failure decreases.

As far as the number of the items are low and the plausibility of failures are minimal then software could be taught to handle customer service situations. But, when the number of scenarios expands hugely, teaching the software becomes laborious and expensive compared to the human workforce. (Interviewee 6)

Defining and developing value co-creation potential

A customer may get food that the robot has delivered, but before that the deliveries must be simplified, and additional elements rejected from the packages. In these cases, creating co-creation value could be possible when the customer would affect the delivery times and delivery location more flexible than a human can, or at least it cannot be

profitable to implement with human resources. The possibility to influence may be minor, in some circumstances, the customer can benefit from the service.

> *Simple tasks can be possible to implement in the system, but profitability is a crucial factor in the development. (Interviewee 6)*

Robot-driven storage could be possible if the storage of the webstore is separated from the regular store. The robot could add value co-creation potential, especially at nighttime and on weekends when the employees are not at work, and labor costs are higher. Customers could still get their order at any time of the day and affect the value co-creation potential when the service is always available. Additionally, the price of the service could decrease which permits even more value.

> *It could be easy to teach a robot to collect items. The robot could operate at night time or on the weekends when the costs of the employee are higher, and the robot's return of investment accelerate. (Interviewee 6)*

On the world's scale, major companies could have resources to develop fully automated systems that could handle the whole supply chain. A completely automated system would enable cheaper products that are delivered directly to the customer without a human. This type of digitalization would provide significant value co-creation potential for the customer when the customer can affect the products, delivery time, and destination and save their resources for other activities.

> *If considering resources, Walmart or the same size company could have the ability to create a sufficiently efficient distribution network that could become profitable. (Interviewee 6)*

From the Soficta case there can be separated multiple possibilities for value co-creation. The potential value co-creation locations in the business model canvas are presented in figure 13.

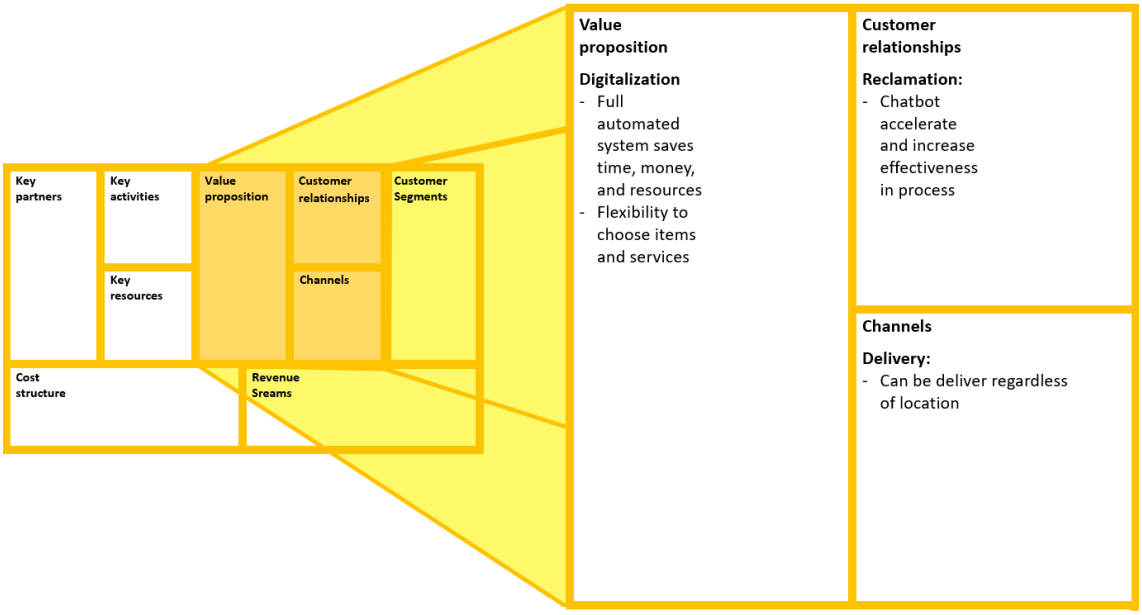

Figure 13 Value co-creation potential in case Soficta.

4.3 Cross-case analysis

This section concentrates on studying about the common practices of the cases and how the digital sale and delivery of the food can provide value co-creation. The practices are presented in similar order than within-case analyses, by starting from identification of practices and measurement phase, then follows the practices of definition and development phases. The cross-case analysis presents a comprehensive synthesis of the value co-creation potential in food online solutions.

Identifying and measuring requirements

There is possible to notice similarities between cases, and many interviewees highlighted requirements that are necessary to consider when creating a digital solution for the food industry. Interviews revealed that digital development takes time, and often projects last

several years. Thus, **time** can be said to be one of the most crucial things in the competition between companies that develop these systems. Usually, time enables experiments and pilots that facilitate to development of a functional solution. Because of the long development time, companies must be able to invest in the development process, which return of investment can be slow. The stable **financial balance** of the company permits long-term investments and high-quality development of the system are plausible. Furthermore, companies must be ready to invest continuously in the system so that it stays competitive against the competitors and can respond to the constantly changing consumer habits.

In Finland, the management of logistics plays a significant role when the distances are long. The sparsely populated country creates a considerable problem for webstores and similar solutions which sell food that require specific conditions. A profitable business requires efficient **logistics** and **multiple orders in the same area** so that costs of delivery do not increase excessively compared to the benefits of the order.

One crucial requirement in the online business is the **infrastructure and high-end technology**, which ensures the base for the online services. Customers need to have a possibility to utilize the service with the current devices, and the technology cannot progress too fast before the customers accept newer solutions. In other words, the consumers adapt and change their habits slowly, and companies need to consider this in their development process. Moreover, it is essential to notice that infrastructure can vary even inside a country, and readiness to utilize digital solutions can differ. Hence, customer segmentation and financial planning rise to a significant role.

When collecting and delivering orders, the **predictability** ensures that the process is possible to operate functionally. For instance, company can prepare its storages to unexpected demand or add some specific season ingredients to its selection of goods. Predictability also facilitates the planning of the delivery route as efficiently as possible and

ensure that orders are delivered on time. The company can also use data to allocate the need for the employees at a specific period or share deliveries equitably.

This study also considered the possibility of the service that is provided fully without human. The assumption was that digitalization and automation could enable a new kind of value co-creation between a system and a customer. The interviews revealed that a fully automated solution is extremely challenging to implement, and the development requires enormous resources. For that reason, **human** is required as a part of the system far in the future because people's capabilities are considerably versatile compared to the robot.

Technology can simplify the collecting process and can facilitate and make work more efficient. Robots are utilized in many tasks in the industry and are usable in many situations. However, robots require stable **conditions** to work accurately, which creates enormous challenges in the food industry in which food properties vary. Only different shapes generate insurmountable problems for the technology developers. In addition, automation or robot should recognize mistakes and should be able to report them. Fixing the problem would be almost impossible with the current technology.

Finally, a **positive customer experience** is required to ensure repurchases and continuity of the service. Customer experience should be considered already in the development of the service, which creates the basis for the final experience. The easiness, efficiency, and speed of the service are permitted in the beginning. Additionally, company needs to plan possibilities to react to possible mistakes, problems, and reclamations because these are the tools that can turn a negative experience to a positive. All the requirements are collected in the same figure 14.

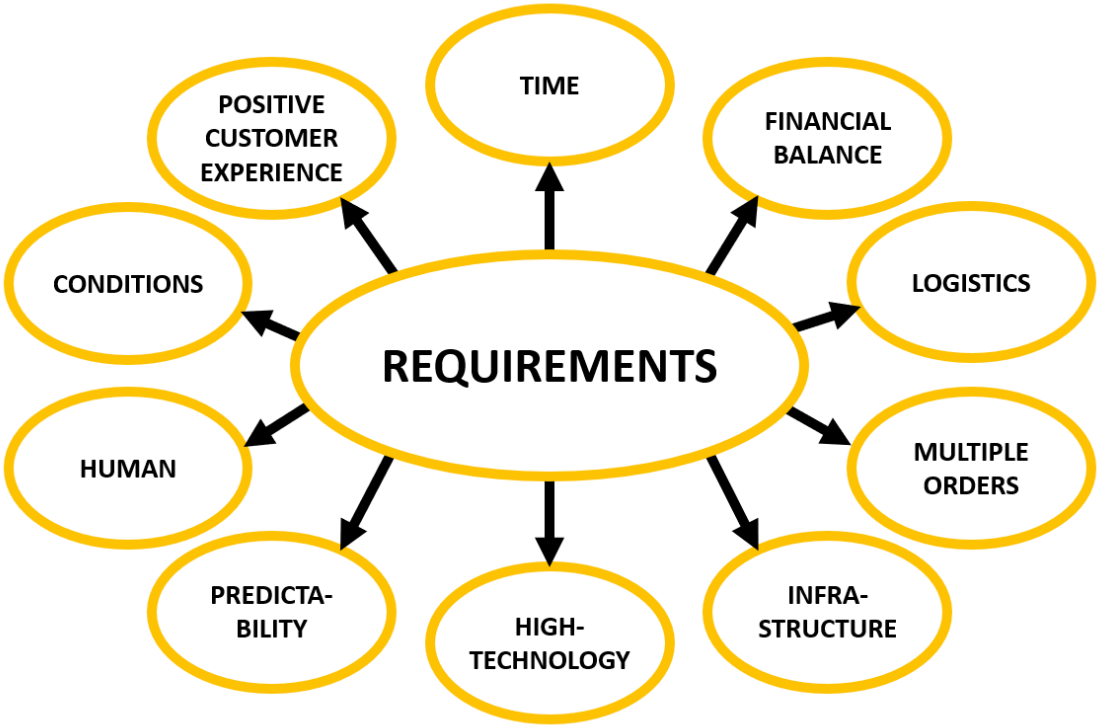

Figure 14 Requirements of value co-creation in food online sales.

Defining and developing value co-creation potential

The cases revealed many opportunities for value co-creation in the companies' business models. In this section, the similarities are combined in the cross-case analysis, which provides common sense about the opportunities and how the food online sale can create co-creation value for the customer. Even if the case companies' fields of business vary, the challenges seem to be general. The interviews show that the business models in the food online sale include a lot of value co-creation potential.

The **efficiency** and **simplicity** of the system provide co-creation value for the customer, especially during the order process. The provided value that efficiency and simplicity accelerate the duration of the whole process when the customer can find correct items from the webstore or application fast and easily. Additionally, when the webstores selection of goods is versatile, customers have greater opportunities to take advantage of

the system and similarly co-create value. The efficiency facilitates the whole process and then value co-creation in the service.

Online solution also needs to provide **flexibility** for the users to ensure the user's possibility of co-creating value. The more flexible the order and delivery options are, the more potential customer has, and can generate co-creation value. online stores cannot be considered as direct competitors of regular grocery stores because the digital solution is closer to a comprehensive service than a product sale. Moreover, the chances of value co-creation potential would increase if the system accepted the customization of the layout of the online solution, or if the customer could tag their favorite products. The collected data can be then utilized inside the company and used to evolve the categories based on the customers' fondness. In that way, the customer can increase value co-creation in many parts of the business model when they **can affect the features** of the system.

For value co-creation, the interaction is in a significant role, and for this perspective, it is recommendable that the company notices the issue. The **reclamation** and **feedback channels** are the most powerful ways for a customer to affect the service development. These channels enable value co-creation in any business model when the customer can ask for improvements for the services. Moreover, the development team does not know the failure of the system if the interaction with the user is not available.

Customer can also be part of the development process and affect, for example, the quality of the service. **Pilots** are in a considerable role especially, in the online solution in which the potential failures are even more plausible than in other unconnected projects. The plausible failures increase exponentially when the digital solutions are included, and simultaneously the number of the connected devices and variations grow. The pilots are one way to permit value co-creation for the customer when they can be involved from the beginning in the process, and service can be edited better to respond to customers' needs.

Digitalization enables new automated features to the webstores and applications. The automated **customization** permits a more efficient and comfortable shopping experience for the customer. This kind of value co-creation does not directly need customers' conscious interaction with the company. The value co-creation is based on the customer's movements in the webstore and what kind of purchase they make. The collected data is utilized in customized content and targeted marketing. Customer can benefit from these features, for example, by customized discounts.

Compared to the regular grocery store, webstores and applications offer **delivery** for the orders, and in this way generate a new kind of value for the customer. Purchases can be delivered to almost every location, and the delivery and flexibility generate value for the service. Delivery generates potential co-creation value for the customer that should, in other circumstances, visit a regular grocery store and pick up the items themselves.

Saved time generates value for the customer when the shopping process has developed to work efficiently, and customer experience has improved. Furthermore, **saved time** gives the customer more opportunities to influence with the service when all time is not spent on other activities.

From the digital perspective, **chatbots** create new possibilities for value co-creation as a part of the business model. The chatbots can accelerate and facilitate the services and broaden the customer's possibility to interact with the company. In the digital trade, the chatbot guides the purchase process and can answer questions, and in that way, it assists to finish the order.

In the future, **automation** takes bigger role in the supply chain, and it will be a potential provider for value co-creation. The automation can make inventories and order products and one day it may collect the products for the customer. This generates new ways to offer service and increase positive customer experience. In addition, automation

provides a broader selection of goods when the order process is more effective, and the supply chain is streamlined.

Finally, digital solutions provide significant potential for value co-creation with its flexibility. The advantage of webstores and applications are the possibility to use them in **any location and at any time**. This flexibility enables a more flexible business model which reflects the customers' value co-creation potential.

Observed and mentioned value co-creation opportunities in online food sales business model are presented in figure 15.

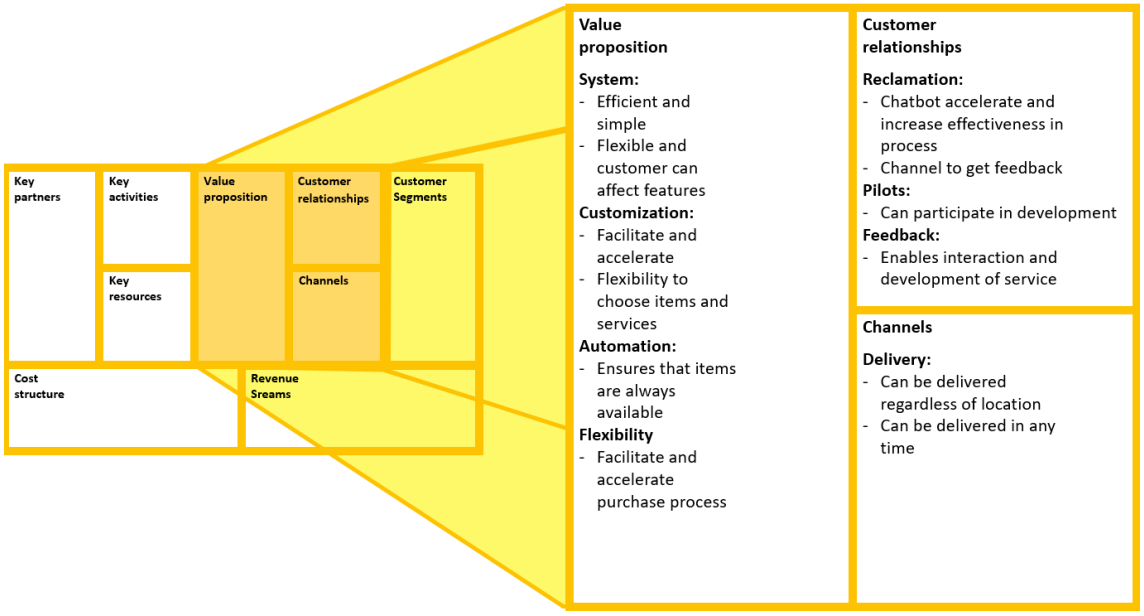

Figure 15 Value co-creation potential in food online sale business model.

5 Conclusion

The purpose of the study was to find answer to questions *how the food online sale permits value co-creation and what are the most efficient parts of business models to co-create value in food online sales?* The thesis began from the description of the value co-creation theory and how the value is co-created, and how it differs from the theory of value co-creation. Following this the value creation on online systems was discussed and then focused deeply on value creation in food online sales. The Internet enables novel opportunities that have positive and negative sides, which Porter presents in his figure (Porter, 2001).

Later the theory of business model was discussed and the comprehensive view of the definitions of the business model was provided. Different scholars disagree with the definition for the term of the business model, and for that reason, the study provided a broad perspective and approach to the theory. The logic of value creation and value capture in business models was presented next. It permitted the understanding of how the value co-creation can be linked in the business model theory. Osterwalder and Pigneur's business model canvas, that utilized as a tool in research, was introduced at this point of the study. (Osterwalder & Pigneur, 2010) Then the research focused on the to explain the online business models and how those differ from other business models. The section ends with the central themes of business model theories that identify and conclude the central aspects.

Even though the cases varied considerably, and all had a different perspective on the issue, the results were still solid. The food online sales can be seen significantly more challenging business area for online sales than, for example, the cloth industry. Various aspects and conditions influence the supply chain, and variable conditions create challenges. However, the food online sales solutions and those business models have considerable potential for value co-creation. Digitalization enables innovative ways to contact customers, and digital solutions can interact with them. Digital solutions also provide value co-creation potential that customers may not be aware of. Customization will

increase in the short run and it permits the value co-creation opportunities that accelerate and facilitate the purchase process. However, automation or robots cannot completely replace human. Decision-making is extremely challenging for the automation system because a case may include multiple variables that the system cannot solve. For this reason, the research ends to the conclusion that people will play a significant role in food online sales and value co-creation far in the future.

5.1 Theoretical implications

The thesis expands the value of co-creation research to the field of food online sales because these two fields have not been combined before. The food online sale is quite new but rapidly increasing business area that has received only small attention in the value co-creation research. The research revealed actors of the value co-creation in the field and defined possibilities for the real implementation in the field. As an exploratory study, the study has permitted the further value co-creation research in the food online sale business and the technological and digital solutions. Additionally, the research states that there is a significant number of possibilities for further research in the field.

The study provides the model to define value co-creation potential in the business model of the food online sale, which permits to examine the functionality of the business model in the field through the theoretical lens of value co-creation. The model can be further used in a study that examines the value co-creation in digital solutions, and it is not tied to the specific industry. However, it is necessary to note that the model is developed for digital solutions, and as such, it may not be suitable for business model research.

5.2 Managerial implications

The study and its findings present managerial implications and offer wide perspective to consider the issue. It provides a consistent perspective to the value co-creation in food online sale and how to value co creation is possible to implement in digital sale channels. The descriptions of the food online webstores or applications of the thesis are only pair

examples of the business models that digital solutions enable. Nonetheless, many value co-creation opportunities can be implemented in various food online sale solutions, and the most common and useful practices are highlighted in this section.

First, the interaction between the company and its customers should be permitted by webstore or application. Interaction has a crucial role in value co-creation theory because the customer must be able to create value in the process. The company can make the interaction possible in their platform with multiple channels. It is recommendable that customers have several possibilities to contact the company and the contacting is made as effortless as possible. The feedbacks and reclamations offer significant knowledge from the operation and products of the company. Not to mention, collected data can be utilized in development work and value creation in the future.

Second, the digital features facilitate data collection from the visitors in webstores or applications. The collected data can be then utilized to develop a selection of goods and to respond better to demand. Additionally, the data enables customer-specific customization that facilitates and accelerates the buying process. Properly timed recommendations for the customer increase the sale and provide value for the customer in situations when they do not try to find the recommended product. During the development of a webstore or an application, it is highly recommendable that executives consider the data collection and its utilization.

Third, the thesis highlights especially digitalization and automation and tries to find value co-creation potential from these. However, the study does not want to underestimate the role human has in the supply chain. Even though digitalization, automation, and robots increase the efficiency of the process, the capabilities of humans play a remarkable role also in the future. Human is significantly more cost-efficient and versatile option compared to robots, and for that reason, they will work together alongside long in the future. This means that the value co-creation is provided mainly by people and this must be considered in the company. Customers have various expectations from the service or

product and its quality, which creates complexity to the value co-creation and its development.

5.3 Suggestions for the future research

There are a lot of opportunities for future research around value co-creation, business models, and food online sales. The digital solutions grant a massive possibility for the research considering their variable nature and broad utilization capabilities. The food online sale is only a minor part of all online sales, and hence value co-creation potential in other industries can provide a fruitful topic for the research. In addition, the utilization of automation and robots are significantly broader in other industries that create new value co-creation opportunities. Naturally, the business models vary in companies, and this study examines only few cases that present similar research with the other webstores or industries.

Additionally, the study focused on the Finnish markets. Similar study can be implemented in other countries, and it could enable an intriguing basis for comparative studies between different countries. It should also be highlighted that digital solutions develop continuously, which can advance the opportunities to create new business models or opportunities for value co-creation. These changes can provide new perspectives for further research.

5.4 Limitations

The scope of the study is broad, and for that reason, micro-level analysis is impracticable. Because of this, the thesis provides only general perspectives of the topic. A more detailed analysis of single practices or business models requires another study. Furthermore, the interviewees represented only couple of different perspectives and contributed only a limited view of the food online sales. Other companies might have dissenting opinions of the value co-creation opportunities in food online sales. Therefore, the perspective is narrow even though several interviews were conducted.

It is good to consider that the study provides only possibilities into the value co-creation in business models of the food online sales, and it does not necessarily provide the best practices. Therefore, all practices are not suitable for all business models and digital solutions. The study is not mentioned as a guide on how to increase value co-creation in food online sales, and all noted potential may not improve the value co-creation in a specific business model.

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Appendicies

Appendix 1. Interview questions

Tell shortly about the company and how it ended-up to create an online sale portal or platform.

What kind of role the online sale has in your business and company?

Describe the online business model and how the revenue is generated.

Identifying value co-creation opportunities:

What are situations in which the customer has a role during the buying process?

How the customer can affect the service or the process?

What are the channels in which the customer can contact the company?

Whether customers have the opportunity to participate in the development work? For example, as a pilot user.

How the company and its online platform provide value for the customer?

What is the most efficient way to create value for the customer?

How the ensure that customers get ordered value? For example, food quality?

How much automation is utilized in this kind of solution?

How much work effort the customer-specific content require to build?

How difficult is replace humans from the supply chain?

What if something goes wrong or the machine makes mistake. How difficult it is to fix without a human.

Is it possible that the robot could fix the mistake?

Whether it makes sense to remove the human from the equation?