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MASTER'S THESIS

Profitability through Material as a Service: A case study of a marine plastic supplier

Lønnsomhet gjennom Material as a Service: En casestudie av en marin plastleverandør

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We confirm that the work is self-prepared and that references/source references to all sources used in the work are provided, cf. Regulation relating to academic studies and examinations at the Western Norway University of Applied Sciences (HVL), § 12-1.

Preface

This master's thesis is the conclusion of our two-year innovation and management master's program at the Western Norway University of Applied Sciences. During the process of writing this thesis, there were many people who contributed to the final product, and they deserve to be acknowledged for their efforts.

First and foremost, we would like to express our gratitude to every informant who participated in an interview and provided their knowledge and experiences. All of the informants were quite helpful, and their information contributed to a good discussion. Without their honest answers and reflections, our thesis would not be completed.

Further, we would like to thank our supervisor, Shrey Nishchal, for providing excellent guidance and worthy feedback throughout the entire process. The supervisor spent his time discussing the best approach to write this thesis. With such outstanding supervision the quality of this thesis has increased.

Lastly, a special thanks goes to our family and friends who never lost faith in us and this thesis throughout its alterations, and for all the hours of effective discussion.

Ellen Gulla Langtvedt & Thi Nha Duong

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Abstract

Profitability is crucial for the survival of any business. In the circular economy, however, it is challenging for emerging business models to be profitable. In this master's thesis, we have made an effort to advance research into how such business models may obtain profitability, through a case study of the marine plastic supplier Ogoori. The firm is a startup that has adopted a new circular business model: Material as a Service.

Material as a Service is a concept in which material suppliers provide clients with their components through services. This entails granting access to the resources without a transfer in ownership. To investigate how this business model may generate profit, we have formulated the following research question:

“How can companies that offer Material as a Service be profitable?”

The research question was answered through two sub-questions: (1) *“Which value can companies create and deliver through adopting Material as a Service?”* and (2) *“How can value capture be achieved with Material as a Service?”*

The motivation for performing this research is that we believe that Material as a Service has the potential to have a positive impact on the environment. The circular economy is an economic system which has a goal to pursue sustainable development, and Material as a Service is a part of this system. The existence of this business model is therefore assumed to help the environment become more sustainable, and thus companies employing this model should be maintained by achieving profitability.

For conducting this master's thesis, we have used qualitative methods. In particular, we have collected new data through observation and interviews, as well as pre-existing data from multiple platforms. With our thesis, we came to the main conclusion that businesses employing Material as a Service should acquire new and long-term clients, while also meeting their demands, in order to generate profitability. This can be accomplished by performing various actions, and we found the following three activities to be the most important: changing consumers' behavior to be more accepting of products containing recycled materials, building an ingredient brand, and ensuring the material is safe.

Sammendrag

Lønnsomhet er avgjørende for overlevelsen til enhver bedrift. I sirkulær økonomi er det imidlertid utfordrende for nye forretningsmodeller å bli lønnsomme. I denne masteroppgaven har vi gjort en innsats for å fremme forskning på hvordan slike forretningsmodeller kan oppnå lønnsomhet, gjennom en casestudie av den marine plastleverandøren Ogoori. Firmaet er et oppstartsselskap som har tatt i bruk en ny sirkulær forretningsmodell: Material as a Service.

Material as a Service er et konsept der materialleverandører gir kundene sine komponenter gjennom tjenester. Dette innebærer å gi tilgang til ressursene uten overføring av eierskap. For å undersøke hvordan denne forretningsmodellen kan generere profitt, har vi formulert følgende forskningsspørsmål:

“Hvordan kan selskap som tilbyr Material as a Service bli lønnsomme?”

Forskningsspørsmålet ble besvart gjennom to underspørsmål: (1) *“Hvilken verdi kan selskap skape og levere gjennom å ta i bruk Material as a Service?”* og (2) *“Hvordan kan verdi fanges gjennom Material as a Service?”*

Motivasjonen for å utføre denne forskningen er at vi mener at Material as a Service har potensial til å ha en positiv innvirkning på miljøet. Sirkulær økonomi er et økonomisk system som har et mål om å drive bærekraftig utvikling, og Material as a Service er en del av dette systemet. Eksistensen av denne forretningsmodellen antas dermed å hjelpe miljøet med å bli mer bærekraftig, og derfor bør selskaper som bruker denne modellen opprettholdes ved å oppnå lønnsomhet.

For å gjennomføre masteroppgaven har vi brukt kvalitative metoder. Vi har samlet inn nye data gjennom observasjon og intervjuer, samt allerede eksisterende data fra flere plattformer. Med masteroppgaven vår kom vi frem til hovedkonklusjonen at virksomheter som opererer med Material as a Service bør skaffe nye og langsiktige kunder, samtidig som de oppfyller deres krav, for å bli lønnsomme. Dette kan oppnås ved å utføre flere ulike handlinger, og vi fant de følgende tre aktivitetene å være de viktigste: endre forbrukeratferd til å bli mer aksepterende ovenfor produkter som inneholder resirkulerte materialer, utvikle et ingrediens merke, og sikre at materialet er trygt.

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1.0 Introduction

1.1 Plastic pollution: a result of the linear economy and circular economy as its solution

The majority of modern businesses are built on the principles of the linear economy (hereafter LE), which is generally summarized as “Take-Make-Dispose” (Patwa et al., 2021, p. 727). It consists of enterprises obtaining the resources they require, turning them into profitable products, and then disposing of anything they do not need (Sariatli, 2017, p. 32). This practice is incredibly wasteful, and it may lead to resource underutilization (Linder, 2017, p. 430). The principles of the LE also apply to the plastic industry, where firms use this kind of material to manufacture products that are intended to be used once, and then discard them later on (Ellen MacArthur Foundation, n.d.). The majority of plastics have a linear life cycle, which has led to the current issue of plastic pollution (Bucknall, 2020, p. 2).

Plastic pollution damages the environment in various ways and pollutes the land, water, and air (Alabi et al., 2019, p. 6-7). Water pollution will be further explained for the reason that this thesis will only concentrate on investigating marine plastic material. It has been claimed that 8 million tons of plastic are being discharged into the marine environment every year (Jambeck et al., 2015, as cited in Alabi et al., 2019, p. 6). This is known to injure and kill a vast number of marine species because of entanglement or ingestion (Derraik, 2002, p. 842). Furthermore, after being released into the environment, plastic undergoes a degradation process and the process of full degradation can take several decades (Müller et al., 2001, as cited in Webb, 2013, p. 3). During the process, the material is often broken into smaller pieces known as microplastics (Ballent et al., 2016; Cashman et al., 2020; Hossain et al., 2020; Thompson et al., 2004, as cited in Liang et al., 2022, p. 2). As a result, they are swallowed by marine species and thereafter ingested by humans, posing a public health danger (Galloway, 2015, as cited in Alabi et al., 2019, p. 8). Because of these issues, there is a need to improve the way plastic waste is collected, managed, and disposed of (Jambeck et al., 2015, as cited in Alabi et al., 2019, p. 9).

The circular economy (hereafter CE) has the potential to be a viable solution to the problem of plastic pollution, as it is argued to be capable of reducing the harmful effects of plastic waste (Barra et al., 2018, p. 4). There is currently no commonly accepted definition of CE (Yuan et al., 2008, as cited in Kirchherr et al., 2017, p. 221). However, CE approaches are broadly

described as being based on the principles of product, component, material reuse, remanufacturing, refurbishing, and repair (EMAF, 2013; Rashid et al., 2013; Mihelcic et al., 2003; Braungart et al., 2007, as cited in Korhonen et al., 2018, p. 37). Simply put, products, materials, and components at the end of their life cycle will be reinvented to continue to generate value. For this reason, any firms that implement their business model in CE focus on maximizing resource utilization through long-term usage and material recycling, and therefore CE is the opposite of the LE (Miljødirektoratet, 2021). Moreover, the CE has a purpose of achieving sustainable development, which involves creating environmental quality, economic welfare, and social equity for both current and future generations (Kirchherr et al., 2017, p. 225).

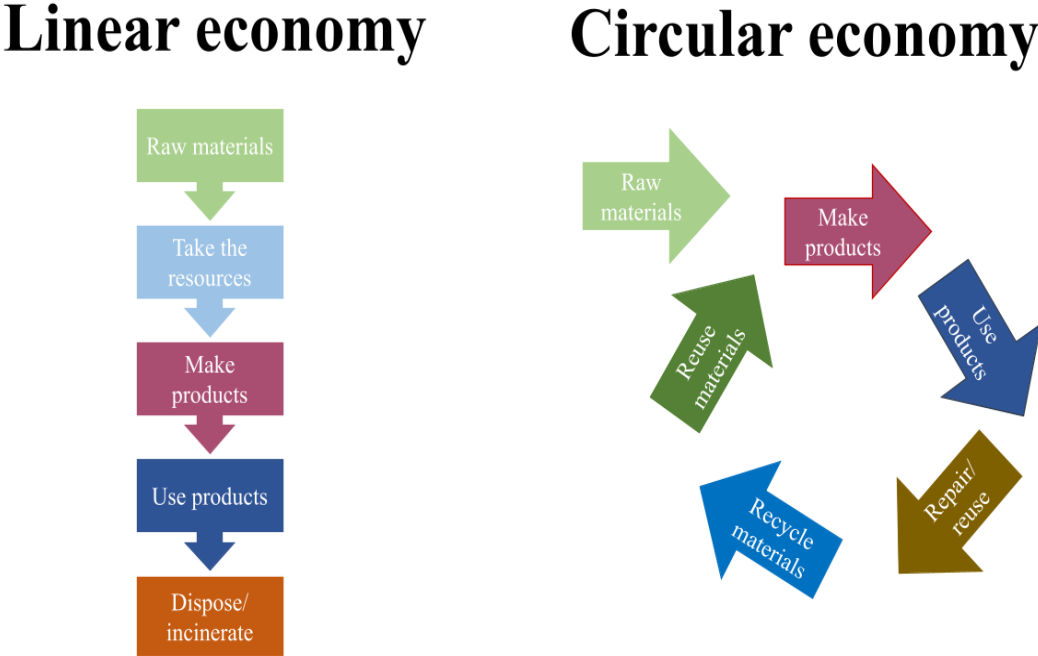


Figure 1: *Linear economy vs. circular economy*

Figure 1 illustrates the difference between the LE and the CE. The main difference is that in the LE, products are discarded after each use, but in the CE, products are recycled, and materials from such products can be repurposed and converted into new goods.

1.2 Circular business models and the master’s thesis topic

The circular business model product-service system (PSS), also known as Product as a Service (PaaS), has been mentioned as potentially being capable of tackling plastic pollution (Retamal

et al. 2021, p. 7). For instance, it has been considered appropriate to use together with reusable packaging systems to manage plastic waste that occurs from packages (Long et al., 2020, p. 15). In the PSS model, producers offer customers access to their products, but keep ownership of them (Ellen MacArthur Foundation, 2015, as cited in Aurisicchio et al., 2019). Similarly, in the novel circular business model material-service system (MSS), suppliers offer producers their materials as services, which entails providing access to their resources without transferring ownership (Aurisicchio et al., 2019). According to Laird (2020), this business model was recently implemented by the firm Ogoori, which refers to this model as Material as a Service. This company's goal is to solve the issue of plastic pollution in the ocean, by providing its customers with access to marine plastic (Laird, 2020). Although the firm has implemented this business model, there is currently little knowledge of it, and existing research still refers to the model as a theoretical concept (Engelmann et al., 2021, p. 1224). As such, it is vital to continue the research based on an existing case. With our master's thesis, we aim to continue the existing research on MaaS based on the case of Ogoori. As such, MaaS is this master's thesis topic.

1.3 Research question and sub-questions

We see that Ogoori is attempting to reduce the negative impact of plastic waste through the MaaS model. In addition, being a circular business model implies that MaaS has a purpose of contributing to sustainability, as the goal of CE is to achieve sustainable development, as noted in 1.1. Therefore, this business model is considered to have a good impact on nature, and we believe that companies who conduct their business with the model should be maintained for their environmental initiatives. To sustain any business, a firm must achieve profitability (Irving et al., 2009, p. 24). Profitability can be explained as when a firm's earnings exceed its expenses (Alarussi & Alhaderi, 2018, as cited in Jayathilaka, 2020). We wish to evaluate how companies with the MaaS business model can achieve profitability while still having a positive environmental impact. This is also an area that requires research, as it has been claimed that there is a challenge to achieve profitability with new circular business models (Ministry of Climate and Environment et al., 2021, p. 9). Because of this, we have formulated the following research question:

How can companies that offer Material as a Service be profitable?

Through the research question, our main goal is to identify how profitability can be obtained for companies that offer materials through services. This will, as mentioned, be assessed through a case study of the company Ogoori. We will use the tool Business Model Canvas

(BMC) together with existing research on MSS and PSS to identify different elements in the firm's business model. A business model describes how companies create and deliver value to customers before converting payments into profits (Teece, 2010, p. 173). This is consistent with another definition, which states that a business model illustrates how a firm creates, delivers, and captures value (Osterwalder & Pigneur, 2010, p. 14). For this reason, these elements will be assessed to evaluate how the business case can achieve profitability.

A SWOT (strengths, weaknesses, opportunities, and threats) analysis of the firm will also be conducted. Based on this analysis, it will be discussed what Ogoori can further do in terms of increasing the three value aspects: value creation, value delivery, and value capture. As such, the following sub-questions have been formulated:

- 1) *Which value can companies create and deliver through adopting Material as a Service?*
- 2) *How can value capture be achieved with Material as a Service?*

1.4 Delimitation

Our master's thesis will concentrate on one enterprise that offers marine plastics through MaaS. For this reason, our thesis will not focus on companies that operate in the LE. We will neither investigate companies that supply other kinds of materials nor entirely new plastics. Further, there are no other companies in Norway or another country that operate with the same business model as Ogoori, to the best of our knowledge. As such, the master's thesis is limited to researching a firm within Norway, and not enterprises in other countries.

1.5 Structure of the master's thesis

This master's thesis will be divided into nine chapters. This first chapter has presented the introduction, including this master's thesis topic and research question. Chapter 2 will provide a brief introduction to the case company and its value chain. Thereafter, in chapter 3, three theories are going to be presented and described. The following chapter will consist of details surrounding the methodology. In this chapter, it will be clarified how data is going to be collected and analyzed, in addition to discussing this research's data quality, and ethics. Chapter 5 will present findings from the collected data, and chapter 6 will discuss those findings based on the theories from chapter 3. Thus, the master's research question will be answered in this section. In chapter 7, our master's thesis will be concluded. Chapter 8 will display the list of references that have been used in this thesis, and appendices will be shown in chapter 9.

2.0 The case

2.1 About Ogoori

Ogoori is a Norwegian startup (Ogoori, n.d.A). The firm was founded in the year 2020 and was developed from the project “From Beach to Boardroom” which concentrated on developing solutions to repurpose ocean plastic (Ogoori, 2020A). As previously mentioned, the company uses the MaaS model to offer marine plastic material. It provides the resource through the use of a subscription model (Johansson & Gasøø, n.d., p. 6).

Ogoori recognizes the importance of ensuring that marine plastics do not re-enter nature, and plans to do so through a service called Plastic Capture and Storage (PCS) (Ogoori, 2020B). Through PCS, Ogoori will collect plastic from nature and store it forever in goods that flow in a closed circular value chain (Urhem, 2020). In order to do so, Ogoori and other businesses in this chain aim to transform marine plastic waste into circular products (Ogoori, n.d.B). The chain will be described in section 2.2. The firm also has an ambition of assisting other companies to adapt and change their operations to fit the CE, by encouraging them to use its traceable marine plastic products (Ogoori, n.d.B).

We were impressed with Ogoori’s current solution of helping other companies become circular and the way it reuses plastic waste to avoid damaging the environment. For this reason, we wanted to conduct a case study of the firm, and we hope that this project can create a foundation for this company and enterprises having a similar business model to achieve profitability.

2.2 Ogoori’s value chain

As informed by Ogoori (n.d.B), the firm is a part of a sustainable value chain network to help its partners change from a LE to a CE. The chain begins with volunteers who collect ownerless plastic wastes at sea and along Norwegian and international shorelines. After being collected, the plastics are transferred to research enterprises. At this stage, Ogoori connects with researchers to ensure the safety and quality of the materials. Specifically, each batch will be tested for technical quality and toxicology based on ISO standards. The researchers then analyze and provide a technical data sheet for each batch, including its composition, mechanical properties, information about its origin, and toxicology (Ogoori, n.d. B).

The next step, according to Johansson and Gasøø (n.d.), is to transport the plastics to a place for recycling. Here, recyclers receive the plastic waste, and coarsely grind, wash and transform

them into new plastic materials. Next, the plastic materials are transported to Ogoori's warehouse, where they are analyzed and categorized into different types of plastic before being transported further. Thereafter, new plastic components with new demands and characteristics are produced. Coming to the next phase, the plastics are used by producers to create finished products (Johansson & Gasøø, n.d., p. 4).

After becoming finished products, they are distributed to the final customers, and after being used, the products are redistributed to the producers, and materials are returned to Ogoori (Ogoori, n.d.C). Hereafter, the materials are prepared to be offered to customers again (Johansson & Gasøø, n.d., p. 4). Ogoori also cooperates with a technology company that establishes digital passports for each plastic batch (Ogoori, n.d.B). This passport provides information on the plastic's story and origin that the customer can follow (Ogoori, n.d.D, p. 2).

3.0 Theory

In this section, we introduced and explained the theories for the master's thesis. These are material-service system (MSS), product-service system (PSS), Business Model Canvas (BMC) and its nine building blocks. The building blocks were elaborated both in a general manner and in relation to MSS and PSS. We also included research on PSS, as there is little knowledge about MSS. Besides, current research on MSS is largely based on PSS (Auricchio et al., 2019). Thus, continuing the research on MSS based on PSS was considered to be appropriate.

3.1 Material-service system

As previously stated in section 1.2, MSS is a new circular business model that centers on material suppliers offering materials as a service to producers. This involves offering producers access to the materials to manufacture products, while the supplier retains ownership and has to perform corresponding responsibilities (Auricchio et al., 2019).

3.1.1 Material-service system and product-service system

MSS is similar to PSS in that they both focus on providing customers access to a firm's offerings without a change in ownership. The difference between the two systems is that in MSS, suppliers provide materials to producers, while in PSS, producers lease their products to end-users. Further, the two systems can be conjoined, as argued by Auricchio et al. (2019). In this scenario, a material supplier offers materials to a producer, and the producer delivers finished products that contain the materials to consumers (Auricchio et al., 2019). After usage, the

materials are eventually delivered back to the material supplier (Engelmann et al., 2021, p. 1230).

In terms of PSS, there are different categories (Barquet, 2011, p. 333). However, only one type is similar to MSS. This is known as use-oriented services (UOS) (Barquet, 2011, p. 333). The model has also been referred to as function-oriented PSS (Gumulya, 2019, p. 73). In this PSS model, a producer owns a product, but sells the functions or use of it, for instance, through leasing or sharing (Barquet, 2011, p. 333). Furthermore, a form of PSS called upgradable PSS has been introduced to address the issue of consumers often discarding outdated products, although the product still can be used (Umeda et al., 2005; Chierici & Copani, 2016, as cited in Khan & Wuest, 2019 p. 770). This concept involves integrating upgradeability, optimized maintenance, and valuable end-of-life parts in the PSS system (Pialot et al., 2017, as cited in Khan & Wuest, 2019 p. 770).

3.2 Business Model Canvas

The term business model is simply defined as how a firm creates, delivers, and captures value (Osterwalder & Pigneur, 2010, p. 14). Value creation is known as the process of increasing value (Chesbrough et al., 2018, p. 4). With this, firms aim to create value from customers' needs (Bowman & Ambrosini, 2000, as cited in Daeyoung & Jaeyoung, 2015, p. 2). Meanwhile, value delivery entails informing clients about the organization and its offers, and delivering them to these clients, as well as demonstrating that the firm's products or services will help customers and meet their demands (Myler, 2013). Lastly, value capture refers to acquiring monetary returns from value creation and delivery (Osterwalder & Pigneur, 2010, as cited in Daeyoung & Jaeyoung, 2015, p. 2). Earning profits has been claimed to be achieved through the value capture activity (Daeyoung & Jaeyoung, 2015, p. 2).

According to Osterwalder and Pigneur (2010), BMC can be described through nine building blocks. These are the ones that illustrate how the firm aims to make money. The building blocks are Customer Segments (CS), Value Propositions (VP), Channels (CH), Customer Relationships (CR), Revenue Streams (RS), Key Resources (KR), Key Activities (KA), Key Partnerships (KP), and Cost Structure (CST) (Osterwalder & Pigneur, 2010, p. 15-16). The following sections will go over these in detail.

3.2.1 Customer Segments

Regardless of the business model, the customer is at the center, and the ultimate goal of every

company is to serve its clients, as claimed by Osterwalder and Pigneur (2010). To achieve efficiency in satisfying customers' demands, a corporation might split clients into different groups based on certain attributes, such as common needs, behavior, and so on. This block identifies different CS the firm has an aim to serve, and a firm may have one or several CS. There are various types of CS, the most common of which are niche and segmented markets. *Niche market* is a smaller group of customers with specific requirements that the firm tailors its products or services to, while *segmented market* refers to the firm's goal of serving multiple consumer segments with moderately different needs and problems (Osterwalder & Pigneur, 2010, p. 20-21).

For firms operating with the MSS business model, producers are the primary customer segment (Aurisicchio et al., 2019). While MSS is geared towards producers who merely want access to materials, the PSS model UOS focuses on serving customers who are willing to accept not becoming the product owner (Tischner & Verkuijl, 2002, as cited in Barquet et al., 2011, p. 335). This model also concentrates on those who want a low investment (Tukker, 2004; Steven & Soth, 2010, as cited in Barquet et al., 2011, p. 335). This is consistent with the researcher Gumulya's (2019) viewpoint, that the customer segment of PSS is those with limited budgets. It means that they don't want to own the products and just want to buy their functionality (Gumulya, 2019, p. 72). Further, the upgradable PSS addresses a series of customer segments, including “[...] customers who seek higher performance and functional guarantee, innovators and early adopters, environment-conscious organizations (B2B), expert consumers (B2C), green consumers (B2C), etc.” (Khan & Wuest, 2019, p. 771).

3.2.2 Value Propositions

Osterwalder and Pigneur (2010) informed that the building block VP includes the array of products and services that create value for a particular customer segment, and is the reason why a customer prefers one firm over competitors. VP creates value by addressing customers' problems or meeting their demands, and is influenced by several attributes. Newness, customization, brand/status, and risk reduction are some of them. *Newness* is about meeting an utterly new need because there previously has not been a similar offering. As such, this need was not realized by customers until they were offered the product or service. Whereas, *customization* is when a firm adapts its offerings to the needs of individual clients or a specific customer segment. *Brand/status* refers to a company's brand creating value for customers, due to the fact that it represents something specific, such as wealth or a particular trend. Lastly, *risk*

reduction adds value by lowering the risks customers face when buying a product or service. For instance, service guarantees work in favor of the customer if the product were to be damaged within a certain time frame (Osterwalder & Pigneur, 2010, p. 22-25).

In reference to MSS, the following has been stated: “MSS can be thought of as marketable sets of materials and services capable of jointly fulfilling the needs of producers” (Auriscchio et al., 2019). Other than offering the function of materials, services may include repairs, maintenance, replacements, or upgrades of the materials (Auriscchio et al., 2019). Thus, the business model’s VP includes supplying materials and offering associated services. MSS also reduces the risks for producers by transferring social pressure to the supplier (Auriscchio, 2019). External pressures that affect a firm, such as regulations or social activists organizing boycotts or media campaigns that undermine a firm's image, are examples of social pressure (Baron et al., 2009, p. 2). As a result, it is the supplier's responsibility to change the material or other aspects they are in charge of, in response to external pressure. When it comes to PSS, the VP entails offering customers access to the products (Tukker & Tischner, 2004, as cited in Barquet et al., 2011). Similar to MSS, PSS also provides other services alongside the product (Auriscchio et al., 2019). Trust and dedication, as well as counsel and training, are also some of the VP the PSS model has the ability to provide (Khan & Wuest, 2019, p. 770).

3.2.3 Channels

The CH building block, as specified by Osterwalder and Pigneur (2010), depicts how a firm engages with its customers, and also how it approaches the client in order to deliver its VP. A firm can reach out to its clients through CH by conducting the following phases: raising customers' awareness about the firm’s products or services, assisting customers in evaluating the firm's VP, enabling them to purchase products and services of the firm, delivering the VP to the clients, and supporting them through post-purchase services. Furthermore, a company can communicate with its customers either directly or indirectly, which means that it can approach the customer through its own CH, such as in-house sales forces or the company's website, or through the CH of its partner. The term “Partner’s channel” relates to firms communicating with customers via their partner's wholesale distribution, retail, or websites. It is also possible to use both kinds of CH simultaneously (Osterwalder & Pigneur, 2010, p. 26-27).

In the study of the PSS model, marketing campaigns can be used to enhance customers’ awareness of a company’s products or services (Mont, 2004, as cited in Barquet, 2011, p. 334).

In addition, firms should also establish networks and platforms that enable two-way communication between the business and the customer, thereby facilitating the delivery of the value proposition to the customer (Gumulya, 2019, p. 72). In Khan and Wuest's (2019) study about the upgraded version of the PSS model, channel components were classified into numerous categories. One of them is the distribution channel, which is used to create strategies for providing PSS services to customers. Another channel is sales, where salespeople are instructed on how to present the VP to customers (Khan & Wuest, 2019, p. 772).

3.2.4 Customer Relationships

Osterwalder and Pigneur (2010) argue that in a BMC, a firm should specify what kind of relationship it wants to establish with a customer segment. Some forms of relationships a firm can choose between will now be clarified. The first is *dedicated personal assistance*. In such a relationship, the firm dedicates a representative to assist an individual customer and develops a deep relationship over time. *Communities* are the second type of relationship, which entails creating a community for users to engage with one another and share knowledge. Through the community, a company can also communicate with users and gain a better understanding of their needs. Finally, *co-creation* is a type of connection in which a business collaborates with its customers to produce value, including allowing clients to write reviews, assist with design, or create content (Osterwalder & Pigneur, 2010, p. 28-29).

Related to CR in MSS, organizations should aim to establish long-term business relationships with producers (Auriscchio et al., 2019). Such an agreement from a PSS perspective can range from months to years (Gumulya, 2019, p. 72). To develop a long-term relationship, firms should establish comprehensive customer service by delivering the product's function, in addition to solutions that support the customer with, for instance, installation, repair, and collection of the product (Xing & Ness, 2016, p. 526). Moreover, the relationship type co-creation has been remarked as a defining relationship in PSS, where customer's contributions add value to the offerings provided by the company (Xing & Ness, 2016, p. 528).

3.2.5 Revenue Streams

Revenue is the most important part of the business model, as it maintains the business's operation. According to Osterwalder and Pigneur (2010), to generate revenue, a company must create value that its customers are willing to pay for. A firm can generate one or several RS in each customer segment, and these segments might have multiple pricing mechanisms

(Osterwalder & Pigneur, 2010, p. 30). One pricing mechanism is *customer segment dependent pricing*, which is explained by Osterwalder and Pigneur (2010) as a price that depends on the features and attributes of a specific customer segment. In contrast, *volume dependent pricing* describes a price that depends on the number of purchased products (Osterwalder & Pigneur, 2010, p. 33).

Various ways of generating RS have been proposed by Osterwalder and Pigneur (2010), including *usage fees* and *subscription fees*. The first type involves creating a revenue stream by charging a fee based on the amount of times a customer uses a particular service (Osterwalder & Pigneur, 2010, p. 31). In contrast, the subscription model involves providing a VP continuously, and customers pay for the use periodically (Gassmann, 2013; Rappa, 2004; McCarthy et al., 2017, as cited in Riesener et al., 2020, p. 731). The charge for using a product or service is often annual or monthly (Osterwalder & Pigneur, 2010, p. 31).

Pay-per-use can be a form of payment in MSS and involves manufacturers paying the supplier based on each time the material has been used, rather than paying for its ownership (Pieroni et al., 2019; Ludeke-Freund et al., 2019; Bocken et al., 2015, as cited in Aurisicchio et al., 2019). As such, pay-per-use is similar to usage fee. Moreover, PSS also has a payment model based on the frequency of product or service usage (Tukker, 2004; Barquet et al., 2013, as cited in Adrodegari et al., 2016, p. 522; Barquet et al., 2011, p. 335). In contrast, Gumulya (2019) has claimed that PSS also has a subscription model. Specifically, the revenue stream comes from rental under a subscription plan (Gumulya, 2019, p. 73). This viewpoint is also supported by another study on the PSS model, that “[...] revenue stream based on distributed payments over time [...]” (Khan & Wuest, 2019, p. 772). Furthermore, regardless of the payment model, the time scale of financial flows in PSS is significantly altered due to the prolonged return (Mont, 2004, as cited in Barquet, 2011, p. 334-335). In other words, compared with the pure product selling-buying model with immediate returns, returns gained from PSS take longer.

3.2.6 Key Resources

To create and offer a VP, reach the desired CS, sustain CR, and receive RS, a firm needs certain resources, as informed by Osterwalder and Pigneur (2010). These are the business KR, which can either be owned or leased by the firm itself or obtained from partners. The resources can be divided into physical, intellectual, human, and financial. While *physical resources* are visible assets, such as buildings and machines, *intellectual resources* include any assets that are intangible, such as brands, patents, partnerships, and so on. *Human resources* involve the

personnel of a business, and lastly, *financial resources* relate to cash or funds that a firm uses to remain its operation (Osterwalder & Pigneur, 2010, p. 34-35).

There are anticipated enablers of MSS, some of which are material identification, material monitoring, material processing at the end of life, and product design guidelines (Auriscchio et al., 2019). These can be seen as resources needed for the model to work as expected. Having the technology to identify, track, and trace materials is a part of material identification and monitoring (Corbin et al., 2018, as cited in Auriscchio et al., 2019). Material processing at the end of life involves operating with a technology that is able to sort, separate, and purify materials (Rahimi & Garcia, 2017, as cited in Auriscchio et al., 2019). When it comes to guidelines for product design, there are design rules that attempt to make materials easy to disassemble and identify (Mestre & Cooper, 2017, as cited in Auriscchio et al., 2019).

In reference to PSS, financial resources are viewed as critical, as they assist the firm in acquiring capital investments (Khan & Wuest, 2019, p. 771). Human resources are also listed as KR in PSS, and organizations using this model should invest heavily in this kind of resource (Tam & McAlloone, 2006, as cited in Barquet et al., 2011, p. 334). Namely, the firm's employees must be knowledgeable about clients' needs (Mont, 2004; Cook et al., 2006, as cited in Barquet et al., 2011, p. 334). When operating with the PSS model UOS, the staff should also have high product understanding (Gumulya, 2019, p. 73).

3.2.7 Key Activities

Osterwalder and Pigneur (2010) stated that KA relates to the most critical actions that a company must conduct to make its business model function. To be more specific, the firm needs these actions to use KR for generating VP, maintaining CR, and such. KA includes some of the following categories: production, problem-solving, and platform/network. Activities regarding *production* are most seen in manufacturing companies, which are designing, making, and delivering products in a large quantity. *Problem-solving* activities involve actions that create solutions to deal with a particular client's problems, and these activities dominate the service industry. The final category is *platform/network*, which refers to tasks for operating a business model designed as a platform. Interface and network management, maintenance, and operating system platforms are typical actions in this category (Osterwalder & Pigneur, 2010, p. 36-37).

In the MSS model, the customers of enterprises benefit from actions the supplier provides as a service such as repairing, maintaining, replacing, or upgrading materials, according to

Auriscchio et al. (2019). Further, controlling the flow of materials to prevent them from being thrown into the environment is also mentioned as one of the main activities of the supplier through the proposal of "[...] an online registry of material passports, which allows knowing where materials are located, and preserving and reusing materials [...]" (Auriscchio et al., 2019). Hence, with such a passport, the supplier is constantly aware of the material's whereabouts.

The main activities of the PSS model involve any actions before, during, and after serving customers that need to be taken care of (Tan & McAloone, 2006; Cook et al., 2006 as cited in Barquet et al., 2011, p. 334). For instance, supporting the development of the customer's business model is a typical activity in the PSS model (Khan et al., 2019, p. 771). In particular, product or service management is emphasized in the UOS PSS model, to ensure that the product or service is always available when the customer needs it (Steven & Soth, 2010, as cited in Barquet et al., 2011; Gumulya, 2019, p. 72).

3.2.8 Key Partnerships

As described by Osterwalder and Pigneur (2010), KP consists of a firm's network of suppliers and partners that makes the business model function as intended. Partners may conduct certain KA, or provide KR to a particular firm. Besides, developing partnerships may be completed for reasons such as optimizing the allocation of resources and activities, reducing risks in a competitive environment, or because the firm needs a particular asset. Moreover, partnerships can be divided into the following categories: strategic alliances, coopetition, joint ventures, and buyer-supplier relationships (Osterwalder & Pigneur, 2010, p. 38-39).

In *strategic alliances*, two or more businesses agree to share resources in order to develop conjoint business opportunities (Jones, 2013, p. 94). Further, *coopetition* refers to when firms compete and collaborate with each other simultaneously (Bengtsson & Kock, 2003, as cited in Walley, 2007, p. 11). *Joint ventures* are a type of strategic alliance in which two or more companies establish a new business and share ownership (Kogut, 1988, as cited in Jones, 2013, p. 97). Lastly, *buyer-supplier relationships* are partnerships that are developed between a buyer and a supplier to ensure dependable supplies (Osterwalder & Pigneur, 2010, p. 38).

In MSS, a variety of stakeholders, such as collectors of resources, resource recoverers, recyclers, producers, retailers, and consumers, might be important to make the business model function (Auriscchio et al., 2019). Producers, especially, are a crucial partner, as it has already

been mentioned that there is a goal for the supplier and producer to establish a long-term business relationship. Developing long-term partnerships with suppliers is also an aim of the UOS PSS (Rapaccini, 2010, as cited in Barquet et al., 2011, p. 335). Furthermore, organizations need a partnership network to implement the model PSS (Barquet et al., 2011, p. 334). To achieve this, companies must first define the fundamental competencies required to execute their business, as well as determine which actors currently possess them (Mont, 2002, as cited in Barquet et al., 2011, p. 334). Researchers also list financial institutions (e.g. banks and investment companies) as common partners in PSS (Adrodegari et al., 2016, as cited in Khan & Wuest, 2019, p. 772).

3.2.9 Cost Structure

According to Osterwalder and Pigneur (2010), the building block of CST illustrates the most crucial expenses in terms of operating a business. Although the basic principle of every business model is to reduce the cost as much as possible, a low-cost structure is particularly important for a cost-driven business model. On the other hand, certain business models are more value-driven and concerned with how to create value for their clients. Premium VP and a high level of personalized service are typical examples of value-driven business models (Osterwalder & Pigneur, 2010, p. 40-41).

Fixed costs and variable costs are two salient features of the CST (Osterwalder & Pigneur, 2010, p. 41). *Fixed costs* are defined as "the costs that are independent of the level of output" (Wang & Yang, 2001, p. 178). They involve salaries, infrastructure rents, and physical assets such as machinery, as informed by Osterwalder and Pigneur (2010). Conversely, *variable costs* vary with the quantity of products or services created. Both features always appear in every business model. However, the proportion of each cost varies based on the attributes of each model (Osterwalder & Pigneur, 2010, p. 41).

There are studies suggesting that businesses using the PSS model need to structure and manage the appropriate CST (Sundin et al., 2009, as cited in Barquet, 2011, p. 334). It has also been stated that companies that operate with the PSS model will incur a high initial cost (Tukker & Tischner, 2004, as cited in Barquet, 2011, p. 335). While a particular expenditure is service costs (Gumulya et al., 2019, p. 73). In addition, there are costs related to technology, research & development (R&D), CH, pilot tests, design, and so on (Horvath et al., 2018, p. 14). The expense of operating, managing, maintaining, and upgrading PSS is also mentioned in another study (Khan et al., 2019, p. 772).

The figure below displays the different aspects that we have presented within the nine building blocks. It is split between the BMC features mentioned by Osterwalder and Pigneur, and research that has been conducted on MSS and PSS. As such, the figure summarizes existing research that we have discovered so far in relation to these concepts.

Customer Segments	Value Propositions	Channels
<p>Business Model Canvas</p> <ul style="list-style-type: none"> ● Niche market ● Segmented market <p>Material-service system</p> <ul style="list-style-type: none"> ● Producers desiring access to materials <p>Product-service system</p> <ul style="list-style-type: none"> ● Those who do not require ownership of materials ● Customers seeking low investments ● Clients with limited budgets ● People desiring higher performance and functional guarantees ● Innovators and early adopters ● B2B: environmentally concerned businesses ● B2C: expert and green consumers 	<p>Business Model Canvas</p> <ul style="list-style-type: none"> ● Newness ● Customization ● Brand/status ● Reduce risks for customers <p>Material-service system</p> <ul style="list-style-type: none"> ● Function of materials ● Additional services ● Suppliers handling social pressure <p>Product-service system</p> <ul style="list-style-type: none"> ● Offering functions of products ● Additional services ● Trust and commitment ● Advice and training 	<p>Business Model Canvas</p> <ul style="list-style-type: none"> ● Raise awareness about products and services ● Assist customers in evaluating Value Propositions ● Allow for purchasing of products and services ● Deliver Value Proposition ● Post-purchase services ● Own Channels ● Partners Channels <p>Product-service system</p> <ul style="list-style-type: none"> ● Marketing campaigns ● Network and platforms enabling two-way communication ● Distribution and sales channels
Customer Relationships	Revenue Streams	Key Resources
<p>Business Model Canvas</p> <ul style="list-style-type: none"> ● Dedicated personal assistance ● Communities ● Co-creation <p>Material-service system</p> <ul style="list-style-type: none"> ● Long-term business relationship with 	<p>Business Model Canvas</p> <ul style="list-style-type: none"> ● Customer segment dependent pricing ● Volume dependent pricing ● Usage fee ● Subscription fees <p>Material-service system</p>	<p>Business Model Canvas</p> <ul style="list-style-type: none"> ● Physical ● Intellectual ● Human ● Financial <p>Material-service system</p> <ul style="list-style-type: none"> ● Material identification and monitoring

<p>producers</p> <p>Product-service system</p> <ul style="list-style-type: none"> ● Long-term relationships ● Comprehensive customer service by providing function of products and additional services ● Co-creation 	<ul style="list-style-type: none"> ● Pay-per-use <p>Product-service system</p> <ul style="list-style-type: none"> ● Pay-per-use ● Subscription model ● Revenue takes longer to acquire in comparison to the sell-buy model 	<ul style="list-style-type: none"> ● Material processing at the end of life ● Guidelines for product design <p>Product-service system</p> <ul style="list-style-type: none"> ● Financial resources ● Human resources: staff with knowledge related to client's needs and the product
Key Activities	Key Partnerships	Cost Structure
<p>Business Model Canvas</p> <ul style="list-style-type: none"> ● Production ● Problem solving ● Platform/network <p>Material-service system</p> <ul style="list-style-type: none"> ● Material repairs, maintenance, replacements, and upgrades ● Controlling the flow of materials through material passports <p>Product-service system</p> <ul style="list-style-type: none"> ● Support development of customers' business model ● Product or service management to ensure their availability 	<p>Business Model Canvas</p> <ul style="list-style-type: none"> ● Strategic alliances ● Coopetition ● Joint ventures ● Buyer-supplier relationships <p>Material-service system</p> <ul style="list-style-type: none"> ● Potential stakeholders: collectors, recoverers, recyclers, producers, retailers, consumers ● Partnership with producers <p>Product-service system</p> <ul style="list-style-type: none"> ● Long-term collaboration with suppliers ● Partnership network ● Financial institutions 	<p>Business Model Canvas</p> <ul style="list-style-type: none"> ● Cost-driven business model ● Value-driven business model ● Fixed costs ● Variable costs <p>Product-service system</p> <ul style="list-style-type: none"> ● Need to structure and manage appropriate cost structure ● High initial cost of operating with the model ● Service costs ● Cost associated with technology, research & development, channels, pilot tests, and design ● Expenses related to operating, managing, maintaining, and upgrading the product

Figure 2: Summary of existing research related to Business Model Canvas, material-service system, and product-service system

3.3 The theories' relevance for the research question and case company

The theory of MSS is relevant to the business case, as the case operates with this business model. Because the theory of MSS is largely based on PSS research, the theory of PSS can also be applied. Referring back to section 1.3, a business model explains how companies can create and deliver value to generate profit. For this reason, the various aspects that have been mentioned within this theory section can be used for discussing the research question. As a result, applying these theories can aid in determining how the case can put itself in a better position to generate profitability. Even though the BMC and PSS theories are primarily concerned with products, it is assumed that the elements presented within each block can be applied to materials. As a result, the theories are appropriate to answer the research question.

4.0 Methodology

This section explains the methodology that was utilized to answer the research question. This involves a clarification of the master's thesis research approach, an explanation of the concept case study, and information on how and from whom data was collected and processed. The data quality of this thesis was also evaluated, and it has been explained how the research was carried out ethically.

4.1 Research approach

Researchers can choose one of two following methodological approaches when conducting a study: induction or deduction (Grønmo, 2016, p. 51). The deductive approach was selected for this master's thesis. Deductive reasoning is an approach that emphasizes deducing a particular research statement from theory to be tested (Grønmo, 2016, p. 434). In other words, this method is based on using empirical situations, meaning reality, to test certain theories. This approach was chosen to answer this master's research question, as the business model MaaS has been mentioned in the theory and has just been applied in reality in recent years. Therefore, this approach fits the purpose of testing how effectively this type of business model performs in practice, in the context of offering access to recycled marine plastics.

4.2 Case study

This master's thesis has been described as a case study, which is a research method that entails thoroughly investigating a current phenomenon under real conditions (Yin, 2018, p. 286). The method is relevant to use when exploring "How" or "Why" questions (Yin, 2018, p. 27). Conducting a case study has been chosen for this master's thesis, as there was a wish to research

the phenomenon: MaaS in the context of recycled marine plastic. Because MaaS has recently been implemented in reality, it is a current phenomenon and has been possible to research under real circumstances. Furthermore, because knowledge of the phenomenon is limited, there was an interest in deeply researching this model in order to achieve a better understanding of how relevant firms can generate profitability when using it. Considering case studies enable an in-depth study of phenomena, it was seen as a suitable choice for this thesis. In addition, this study sought to answer a “How” question with the research question: “*How can companies that offer marine plastic as a service be profitable?*”. As such, conducting a case study seemed appropriate.

According to Yin (2018), researchers can perform a case study in one of two ways: they can analyze multiple cases or only one case. A case might be a person, group, organization, or institution (Yin, 2018, p. 286-288). Ogoori is the only company this thesis centers on, meaning that this research is a single-case study. A multiple-case study has not been chosen because there are no comparable companies in Norway.

4.3 Qualitative method

To conduct a study, the researchers always need to consider which methods to use for data collection and interpretation. Researchers can choose to use qualitative methods, quantitative methods, or both to gather information when conducting a study (Easterby-Smith et al., 2018, p. 122). Qualitative research was used in this thesis. Simply put, qualitative research involves collecting non-numeric data (e.g., text, language, symbols) to achieve an in-depth understanding of human beliefs, experiences, opinions, behaviors, and such (Pathak et al., 2013, p. 192). According to Easterby-Smith et al. (2018), it often relates to open-ended questions, instead of pre-coded questions and responses. Moreover, qualitative data is often developed by the researcher (Easterby-Smith et al., 2018, p. 173). This frequently involves collecting data through informants. In qualitative research, informants supply information or interpretations of the researched topic (Yin, 2018, p. 287).

There are several reasons why this master’s thesis incorporated qualitative research. First of all, the MaaS business model is applied in reality to a small extent, particularly in the plastic recycling sector. Because of this, there was a desire to understand the reason Ogoori had chosen to do such a business and get to know their operation. It was presumed that this could be achieved by attaining an in-depth understanding of informants' opinions and experiences through open-ended questions. When using such questions, informants are frequently required

to provide more detailed answers, which were assumed to increase the possibility of acquiring sufficient data to answer the research question. Hence, a qualitative method was preferred. Besides, there was a wish to use the theories in section 3.0 to consider the current operation of Ogoori and how it may be improved to generate profitability. By asking informants how they plan to continue their activities, we can see what ideas the firm have not yet considered that may have the potential to increase profit. Therefore, achieving a comprehensive understanding of their plans was desired.

4.4 Informants

Informants are people who supply information about a certain phenomenon, as indicated in section 4.3. They are also the subject of a research and are able to suggest other sources that could be relevant to the study (Yin, 2018, p. 287). We became aware of the case at “Masterdagen” on November 4th, 2021, held at the Western Norway University of Applied Sciences, Campus Bergen. The company presented itself at this event, and after this, the parties came to an agreement that this thesis could be written about Ogoori. Three of Ogoori’s employees with different roles in the firm were chosen as informants. These informants provided sufficient data to answer the research question, and interviewing other individuals was not assumed to provide further information.

A representative from a company that is a customer of Ogoori was also chosen as an informant. As a result, a total of four informants participated in this thesis. We desired to get in touch with one of the case’s customers, as they were believed to have valuable insights on aspects such as value creation, that could assist in examining how Ogoori can be in a better position to achieve profitability.

4.5 Data collection

In this thesis, two categories of data were collected, which are primary and secondary data. The following sections will explain how data has been gathered through both types.

4.5.1 Primary data

Primary data refers to any new information that the researcher gathers through different methods of data collection (Easterby-Smith et al., 2018, p. 173). Ajayi (2017) claims that primary data is original, and it is gathered directly by the researcher for the first time. This type of data is also unique, because it supports the researcher in finding a solution to their problem

(Ajayi, 2017, p. 2). For these reasons, primary data was gathered. It was assumed that primary data could provide more concrete information to the case of Ogoori in order to find the best solution to generate profit for the business. The toolkit for primary data gathering is versatile, involving observation, interviews, questionnaires, and so on (Ajayi, 2017, p. 3). In the context of this master's thesis, qualitative interviews and observation were selected as methods for data collection.

4.5.1.1 Interviews

Qualitative interview refers to directed conversation that arises from questions and answers about a particular topic (Lofland and Lofland, 1984, as cited in Easterby-Smith et al., 2018, p. 179). It is claimed that interviews give researchers and interviewees an opportunity to have joint discovery, understanding, reflection, and elaboration, and to enlighten lived experiences and points of views (Tracy, 2013, p. 132, as cited in Easterby-Smith et al., 2018, p. 179). Therefore, a researcher using this method is able to reach the interviewee's worldview and study phenomena that are nearly impossible to observe (Easterby-Smith et al., 2018, p. 179). Further, qualitative interviews are used to describe a wide range of interviewing tactics, from unstructured, semi-structured, to highly structured interviews (Easterby-Smith et al., 2018, p. 184-185). However, regardless of interview type, the researcher always needs to be sensitive and skilled enough to understand the respondent's point of view, as well as be able to explore their opinions (Easterby-Smith et al., 2018, p. 179).

Semi-structured interviews were conducted to figure out the research question. This category is defined as an interview having selected topics beforehand and enabling the interviewer to be more flexible (Easterby-Smith et al., 2018, p. 184-185). With this type of interview, the interviewer always has the possibility to ask follow-up questions based on the development of the conversations, despite having an interview guide (Tjora, 2017, p. 158-159). The background behind this choice of interview type is that some specific questions were seen as necessary to ask. However, there was a wish to have the option to change these questions later on. Furthermore, it was aimed to gain a comprehensive and deep understanding of the informants' worldview. Asking questions based on what was shared by the informants during the interviews was assumed to reach this purpose.

Easterby-Smith et al. (2018) informed that preparing an interview guide is vital before conducting semi-structured interviews. It is defined as a script of questions that are set in a predefined order. The goal of creating an interview guide is to assist the researcher in

determining the interview's purpose (Easterby-Smith et al., 2018, p. 185-186). To ensure that the interviews contributed to answering the research question, interview guides with specific topics and questions were prepared. The interview guide was based on elements from the theory section, and can be seen in appendix 1-4.

Interviews can be implemented individually or in groups consisting of multiple informants (Easterby-Smith et al., 2018, p. 180). Individual interviews were conducted for this thesis due to the assumption that certain informants would prefer sharing their thoughts while they are alone. Additionally, it was a desire to allow the interviewees to express their opinions without being influenced by the viewpoints of others. Further, performing one-on-one interviews with each informant was presumed to make it easier to steer the conversation in the preferred direction.

Researchers can conduct interviews face-to-face or remotely, according to Easterby-Smith et al. (2018). Both types of interviews can also be used to collect information. Interviews conducted over the phone, email, or chat are known as remote interviews (Easterby-Smith et al., 2018, p. 179). Only digital forms of interviews were employed in this master's thesis. Remote interviews were organized through the virtual conference platforms Zoom, Microsoft Teams, and Google Meet, with the goal of offering more flexibility as the informants' locations were far away from ours. The interviews lasted from 30 to 60 minutes, and there were some technical difficulties with informants 3 and 4 due to bad connections. For this reason, we were unable to transcribe the entire conversation with these informants.

All the interviews with the informants were recorded, with their prior permission. Doing sound recordings was necessary to make sure that all information provided by the interviewees was captured. Capturing all data from the conversation was expected to explain the reason for the interviewee's opinions or behaviors. It also ensured that the findings were transparent and that we had a clear perception of them. The data recordings were transcribed into text after the interview for further analysis.

4.5.1.2 Observation

According to Easterby-Smith et al. (2018), observation involves research where researchers observe study participants in a specific context. With such a data collection method, the researchers may employ various roles, ranging from complete observers to complete participants (Easterby-Smith et al., 2018, p. 210). The type of complete observers was used in

this master's thesis. This observation role involves the researchers keeping a distance from the observed situation and avoiding any form of engagement (Anderson, 2008a, as cited in Easterby-Smith et al., 2018, p. 211).

We were invited to attend "Sirkulærdagene" on the 26th of April at the Western Norway University of Applied Sciences. As such, we employed the observation method once, and it was not planned to conduct this method until the invitation was provided. During the event, we just had a chance to listen to several companies and other students present their ideas for conducting different circular business models. For this reason, the role of the complete observer was used. At this event, Ogoori were amongst the businesses that introduced their business models. Due to this, the day provided an opportunity to learn more about Ogoori's model and observe how the firm presents itself. We also got insight into how other companies execute circular business models. However, only the aspects that are relevant to Ogoori have been further used in this thesis.

4.5.2 Secondary data

Easterby-Smith et al. (2018) defined secondary data as research information that already exists through, for instance, publications. Company reports, websites, letters, books, blogs, and newspaper stories are a few examples of this kind of data (Easterby-Smith et al., 2018, p. 173). This type also includes documentation and archival records (Yin, 2018, p. 113). Furthermore, the researcher must always critically assess the credibility of such data sources (Easterby-Smith et al., 2018, p. 174).

We sought to collect secondary data because it was assumed that the data could contain both relevant and important information. Websites, books, archival records, documentation, and academic publications were utilized as secondary data in this thesis. Academic articles were not previously listed as an example of secondary data, but are considered to be this type of data, as they are research that has already been conducted and published.

Websites were used in the thesis to identify aspects of Ogoori's business and its value chain. As a result, this kind of secondary data was employed to discuss the case. Meanwhile, books were used to explain parts of the theory and various aspects of this methodology section.

Archival records involve public use files, such as data published by local governments, service records (e.g. records of the number of clients served in a given time), organizational records (e.g. budget or personnel records), maps and charts depicting a site's geographical

characteristics, and survey data, such as data about a case's employees (Yin, 2018, p. 117). Organizational records from Ogoori were obtained, such as its budget and financial projections. Another document from Ogoori that provides information on their value chain was also acquired. These were utilized to convey details about their chain.

Documentation includes personal documents (e.g, emails, letters, and diaries), reports of events (such as agendas and announcements), administrative documents (for instance proposals and progress reports), formal studies or evaluations related to a case, and news articles (Yin, 2018, p. 113). In this thesis, blog posts from Ogoori and news articles related to the case were used, in addition to administrative documents acquired from the firm. These were used to identify Ogoori's business model. Moreover, academic articles were employed extensively in the theory section to clarify the different theories and concepts. As a result, they have been utilized to elaborate the majority of the concepts and topics this master's thesis centers on.

4.6 Data analysis

This section presents how the data was analyzed. According to Easterby-Smith et al. (2018), all relevant data must be organized and often transcribed before beginning the main analysis. Transcription can be accomplished in numerous ways, from writing word for word to writing down silences and gestures. The level of detail required in a transcription is determined by the research's goal and methodological approach (Easterby-Smith et al., 2018, p. 234-235). To conduct the main analysis, we used the method called "Cross-sectional and category-based division of data". Johannessen et al. (2011) argue that this method aims to divide data through indexing, which entails identifying sentences or paragraphs in the data that reflect specific topics. Categories are established as a result of this. Alternatively, researchers can create categories based on the topics covered in the interview guide (Johannessen et al., 2011, p. 188-189).

The theories from section 3.0 were used to form the categories for this master's thesis, and to organize data, an excel sheet was created. The main analysis entailed both researchers first going through the secondary data and identifying elements that went under each category, and classified them accordingly in the excel file. After collecting primary data, audio recordings were transcribed. Words such as "Uhms" and sentences the informants did not finish were removed to gather the essence and eliminate unnecessary data. Otherwise, the recordings were transcribed word for word. Thereafter, we went through the new data and inserted the

information into the excel sheet. Following the data entry, we highlighted the information we considered to be the most relevant.

4.7 Data quality

According to Grønmo (2015), data quality must be evaluated before, during, and after data collection in order to ensure that a study is reliable and can be used for further research. Certain criteria should be taken into account when evaluating data quality, and two of them are reliability and validity (Grønmo, 2015, p. 240).

4.7.1 Reliability

Reliability involves activities of a research, such as data collection procedures, are able to be repeated with the same outcome (Yin, 2018, p. 42). This criterion is essential in data evaluation as it reinforces trust in the results of an empirical analysis, as well as the qualitative data that served as the foundation for these outcomes (Grønmo, 2015, p. 249). There are different types in terms of reliability, and the most common types are stability and equivalence (Grønmo, 2015, p. 248).

Stability refers to how consistent information about the same phenomenon is when the same data collection methods are used at different times (Grønmo, 2015, p. 242). A phenomenon is considered to stay consistent if the data does not change after being collected several times. Grønmo (2015) proclaims that there are different ways of evaluating stability. One way of evaluating this criterion is that the researcher conducts a critical review of the same data material at different points in time (Grønmo, 2015, p. 249). In this thesis, this evaluation method was implemented. To be more specific, transcriptions from the interviews were inspected various times, starting from the interview process until the end of the data analysis, in order to have a high stability level. Besides, secondary information was considered the same way, meaning that pre-existing data was checked various times. The critical review also included sending the transcribed data to informants both before and after the analysis to ensure the information was correct.

Equivalence is the second type of reliability. It is explained by Grønmo (2015) to be based on the consistency between data collections that are done at the same time but by different people. There are numerous techniques that can be used to evaluate this type of reliability. Assessment of equivalence in this project was conducted based on the following technique: different researchers review the same information material independently of each other (Grønmo, 2015,

p. 250). It means that both of us evaluated transcriptions from interviews alone several times before discussing the information. This was also done with secondary data. Particularly, data was discussed from multiple perspectives at various points in time (e.g., before and after interviews, when checking secondary data sources) to ensure that the findings were most trustworthy.

4.7.2 Validity

Validity refers to the degree to which assessments and research findings accurately represent the things they are supposed to describe (Easterby-Smith et al., 2018, p. 99). Generalizability, also known as external validity, is a form of validity, which involves the assessment of whether theories or observations applied in a particular case have applicability to other contexts (Easterby-Smith et al., 2018, p. 130). This concept also includes discussing if results from one research can be applied to other contexts (Easterby-Smith et al., 2018, p. 100). This form of validity has been discussed in section 6.4.

4.8 Ethics

Researchers must ensure that their study follows ten principles of research ethics, where six protect the interests of informants and four protect the research's integrity (Easterby-Smith et al., 2018, p. 157). The principles which focus on protecting the informants include: ensuring that no informants are harmed, their dignity is respected, that a fully informed consent is obtained from them, their privacy is protected, guaranteeing the confidentiality of data, and that individual's or organization's anonymity is safeguarded (Bell & Bryman, 2007, as cited in Easterby-Smith et al., 2018, p. 157).

To protect the study's informants, we did not discuss sensitive information that could potentially harm the informants or their dignity, and they were made aware that they had the right to withdraw from the data collection process at any time. Furthermore, a written information and consent form were sent to the informants before the interviews, with the option to accept audio recordings. This form ensured that we received a complete informed consent from each informant. Moreover, transcriptions, as well as the findings section, were sent to the informants for approval that the information could be used in the thesis, and to give them the opportunity to remove or change information. This ensured that informants' privacy was safeguarded, and guaranteed that confidential information was excluded from the thesis. Data confidentiality was further protected in the sense that the sound recordings were deleted from

personal computers at the end of working on the thesis. Besides, every informant, including companies in the value chain of Ogoori, was made anonymous in this text.

Principles that protect the research's integrity are: avoiding providing false information about the research's aims, that affiliations, funding sources, and conflicts of interest are declared, being transparent and honest when communicating about the study, and avoiding misleading reportings of findings (Bell & Bryman, 2007, as cited in Easterby-Smith et al., 2018, p. 157).

The research's integrity was protected by ensuring that the four principles were followed. The goal of this research has never been falsely informed and has remained consistent throughout the project. Thus, there was no need to notify about changes in the objects of the study, and informants became aware of the aim through the information form. Further, there was no conflict of interest or affiliations between us and Ogoori, and this thesis was not funded. Thus, there was no need to declare anything related to this. The next to last principle of being honest and transparent was understood to involve being transparent when writing the master's thesis. The limitations of this study were clarified in section 7.3 of this thesis. By doing so, we were transparent about this study's shortcomings. Lastly, interviews were recorded to avoid false reporting of findings and to ensure that all information provided by the interviewees was identified. These transcriptions were sent to informants to guarantee their accuracy. As a result, the findings reflect the gathered information.

To further ensure the research is conducted ethically, researchers must evaluate if their study is subject to notification (Johannessen et al., 2011, p. 97). On the website of Norwegian Centre for Research Data (NSD), it is stated that researchers that conduct sound recordings as part of their project, must notify of their project. Since we had a plan to do the sound recordings when interviewing, we informed of our project at the end of January 2022, and in March we got confirmation from NSD that we were able to continue conducting our research.

5.0 Findings

This section will present findings gathered from both primary and secondary data. Findings will be split into different categories corresponding to the theories of BMC and SWOT, except one category related to Ogoori's service products

5.1 Ogoori's service products

The first informant clarified that Ogoori offers two service products: MaaS and PCS, and described MaaS as a closed-loop service that distributes the plastic from Ogoori's warehouse to the clients, and eventually transports them back to the storage. Informant 2 elaborated on the loop by stating that end-users are required to return the product to Ogoori's client after usage. Thereafter, clients can redistribute the product to other end-users until they need to disassemble it, and merely return the material to Ogoori. Further, the MaaS model is regenerative, as it ensures that a material is neither burnt nor landfilled at the end of its life cycle, but returned as raw material to be repurposed into a new item, according to the third informant.

In terms of the PCS service, informant 1 stated that it focuses on beach cleanups and financing them. With the service, Ogoori's customers pay the firm to fund the action of beach cleanups, and from this activity, marine plastic waste is collected and transferred to the firm's warehouse. This was mentioned by the same informant, who further clarified that there are two reasons for the PCS service's establishment. The first reason is that one of the firm's goals is to fund cleanups, and the second is that Ogoori wants the plastic collected during the beach cleanups. It was also revealed that if the corporation funds the cleanups, it can set the terms for registration of cleaning data, as well as plastic sorting and other procedures. PCS was clarified further by informant 3, who revealed that Ogoori's two service products connect to each other since the plastic gathered through the PCS service serves as raw material for the MaaS model.

5.2 Customer Segments

In terms of CS, informant 1 said that Ogoori has identified two target segments, where MaaS focuses on one of them and PCS concentrates on the other. Although the services target different CS, the first informant clarified that MaaS clients can also use the PCS service to finance cleanups. However, the target group of PCS cannot use or does not need the plastic, according to the second informant. As a result, MaaS is not an option for these customers. Further, informant 2 claimed that Ogoori can address different kinds of needs with the two service products.

5.2.1 MaaS customer segment

When it comes to who Ogoori targets through MaaS, it was declared by the first informant: *"[...] we would target companies with a strong brand and that have this sustainability desire and to excel in that area and also has physical products [...]."* Informant 2 explained that this service fulfills the needs of businesses that desire to use plastic. Further, the second informant

also revealed that its customers are firms that own products but may outsource production, and perform other activities, such as design, promotion, and selling the items. According to this informant, plastic producers who conduct production for Ogoori's clients are stakeholders in the value chain. However, some of Ogoori's clients have their own production facilities, as claimed by informant 2, and further mentioned that these companies previously manufactured products using other materials and now desire to combine this material with Ogoori's plastics.

For MaaS, the company has determined that stationary products that are difficult to be taken, such as benches that are stuck in the ground, are the best fit for Ogoori's model. This was mentioned by the second informant. The first informant also stated that Ogoori only accepts organizations that are willing to adapt to a service model, and the second informant clarified that this service model is PaaS. The third informant also said that because Ogoori wishes to transform clients' models, the firm has long onboarding sessions with potential clients. Further, the second informant explained that its direct clients include those distributing to large corporations, municipalities, schools, parks, and so on. Moreover, Ogoori also has a goal of expanding the MaaS service to the whole world, as expressed by the same informant.

5.2.2 PCS customer segment

With the PCS service, informant 1 declared that the firm targets businesses that do not have physical products but still have a brand. According to the informant, these companies have an ambition of environmental sustainability. Informant 2 elaborated further that by providing this service, Ogoori fulfills the needs of those who cannot use or need plastic, but want to help clean up nature.

5.2.3 Businesses Ogoori does not target

Certain companies, such as commodities providers, are not targeted by Ogoori. This was expressed by informant 1, who also expressed the firm does not target companies that are unwilling to change into the service model. Informant 3 supported this by stating that there are companies that want to combine Ogoori's ocean plastic with virgin plastic in their products and then sell them, which Ogoori does not tolerate.

5.3 Value Propositions

5.3.1 Ogoori's main value proposition

Informant 1 clarified: *"Our main value proposition is clean nature. [...]."* For this reason, Ogoori has launched the two different service products, MaaS and PCS. These two products share a common value, which is to spread a positive impact on the environment through the action of cleaning nature. Removing plastic from nature is also the main purpose of Ogoori, and by doing so, the firm regenerates the ecosystem, as expressed by informant 3. This informant also claimed that researchers, scientists, and the general public recognize the benefits of plastic removal, since they have concluded that this action is good for nature and the organisms living in it.

The value proposition of PCS will be clarified in the next section, and the following sections will focus on the value proposition of MaaS.

5.3.2 PCS value proposition

When sharing thoughts about the PCS service, informant 3 clarified:

"[...] what we are doing is we are selling impact, regenerative impact on nature to these companies that can't do it themselves or for some reason don't want to do that. They want to use their money to get others to do that. So that is Plastic Capture and Storage [...]."

According to the first informant, customers that pay for cleanups through the PCS service will receive "Environmental, Social, and Governance" (ESG) data sets. This is data that firms can utilize in their Sustainable Development Goals scoreboard, as clarified by the third informant.

5.3.3 Offering material, data sets, and plastic story

Informant 1 expressed that clients of MaaS are supplied with marine plastic material. In addition, they receive data on their product's environmental impact, and stories from the plastic cleanup, which they can share with their own clients, as revealed by the same informant. As previously stated in section 2.2, Ogoori uses digital passports to provide information on the plastic story. According to Ogoori (n.d.B), this story begins with the collection of plastic and continues with the transformation into circular products. This storytelling allows Ogoori to produce intangible value while also reflecting responsibility and accountability for the entire value chain (Ogoori, n.d.B).

5.3.4 Additional services

Providing supplementary services to customers is a way for Ogoori to enhance the customer experience, and these extra services are viewed as an additional value proposition (Ogoori, n.d.E). One of these services is supplying more plastic materials when customers require replacements, according to the second informant.

5.3.5 Quadruple bottom line

In terms of MaaS, Ogoori's business delivers value in several areas, not only the environment. In this regard, informant 1 referred to the term "Quadruple bottom line". This phrase is derived from the concept "Triple bottom line", which includes three aspects: planet, people, and profit (Elkington, 1997, as cited in Correia, 2019, p. 30). This entails that firms concentrate on social equality, environmental quality, and economic benefits to become more sustainable (Elkington, 1998, as cited in Correia, 2019, p. 30). According to the first informant, Ogoori has given this concept a new dimension. Particularly, informant 1 shared that the firm is concentrating on providing value in accordance with the four dimensions: planet, people, profit, and purpose.

The planet aspect involves Ogoori's ambition to clean up nature by removing plastic, as this is the company's main goal. Meanwhile, the people aspect entails providing value that is not monetary but rather enhances people's consciousness, thereby building a community that performs good deeds for the environment, as expressed by the first informant. The informant further clarified that with this aspect, Ogoori encourages end-users to consume less plastic, and hopes that when consumers engage with the plastic objects, they will think twice about their own consuming habits. This informant also mentioned that in terms of the people aspect, the firm also wants to keep people getting paid fairly and to engage as many people as possible in its value chain.

In terms of the profit dimension, informant 1 mentioned that the firm's profit will be used to invest in more cleanups of the environment. The fourth informant also highlighted the commerciality aspect:

"[...] Ogoori were also understanding and open to the commercial part of this. We need to make this a commercial opportunity as well as ideological. Because it's not possible for us to survive as a company otherwise. And they had no problems of talking about this. You have to look at both sides. [...] and that's why we're working with Ogoori."

As for the purpose aspect, informant 1 interpreted it as the future impact of the company's actions. The informant believes that Ogoori's activities will help current generations be aware

of the harmful effects of plastic consumption, thereby reducing similar behavior. According to the informant, Ogoori activities will also protect future generations from the problems the current generation confronts.

5.3.6 Newness

In regard to providing something new, the third informant stated that the MaaS business model is novel, and is a novelty for most companies. Furthermore, the firm claims to be the first in the world to provide raw material as a service, and if not, at least the first to supply raw material that has been cleaned out of nature (Gaasø, as cited in Urheim, 2020). As such, Ogoori's offerings are new and hence have the potential to trigger an entirely new demand in customers.

The first informant revealed that Ogoori's service model differs from those who use a regular rental or sales approach. According to the informant, a service product entails wrapping the object the business offers in multiple layers of service and delivering it on a continual basis. If a corporation rents out materials or offers them through sales, its customers will not get a steady flow of services. With a rental approach, customers may also consider the price as too expensive, as the clients only receive the material and nothing else, as claimed by the same informant. Thus, unlike sales or rental models, the service model provides customers with services continuously. As a result, a new demand is met. Furthermore, the second informant emphasized that it is important for Ogoori to use a service approach rather than selling, as the firm must ensure that its plastic does not end up in the ocean, which could happen if the plastic is sold. The second informant also mentioned that Ogoori's business model is distinct because as its customers' businesses grow, the environment becomes cleaner and pollution diminishes. The informant clarified that this is not the same as in the linear economy, in which enterprises acquire a negative footprint as a result of high resource extraction.

5.3.7 Decreasing social pressure for the customers

According to informant 2, the MaaS model helps Ogoori's customers, as well as the end-users, to reduce social pressure since Ogoori is the one in charge of the plastic material:

"[...] we are in charge of the material throughout the whole value chain. And it needs to come back to us. So our customer is not responsible for the material, and the end customer is definitely not responsible for the material."

5.3.8 Establishing trust and a reputable brand

According to Ogoori (n.d.E), its brand and reputation for ensuring clean plastic products are mentioned strongly as a value the business can bring to its customers and end-users. The brand will be established as a guarantee of the plastic's origin and a confirmation of its value. By using Ogoori's material, customers will increase the value of their brand, thereby making a positive impression, improving their ability to be recognized in the market, and providing a product with larger value to end-users (Ogoori, n.d.E).

According to Ogoori (n.d.E), the firm will employ its own information channel, traditional editorial media, as well as social media to develop trust in the brand. It will produce editorial content that incorporates all actors in the value chain, and the content will correspond to real conditions and be verified through tracking technology (Ogoori, n.d.E).

During the interview, the term ingredient brand was mentioned by the first informant: "*Ogoori is that ingredient brand for sustainability and re-generativity [...].*" The term refers to when a company focuses on a particular ingredient or component of a product or service and gives it a separate identity (Washington & Jain, 2014, p. 298). Through Ogoori's ingredient brand, customers derive additional value from their products, while demonstrating that they contribute to a clean environment through products created from its plastic material. Ogoori's ingredient brand is displayed on the firm's label. The label is placed on clients' plastic products and signals to consumers that the products help to clean up the environment, according to the first informant. A QR code on the labels verifies that the plastic is picked up from the beaches, as shared by informant 2. The informant further explained that by scanning the QR code, anyone can see images illustrating the journey that plastic has gone through. This is how Ogoori builds its reputation and gains clients' trust.

5.3.9 Customization

As previously mentioned in section 5.2.1, in order to become an Ogoori customer, businesses must be willing to transform their business model into PaaS. Ogoori will assist customers with the conversion to this model. However, each firm has different levels of transformation depending on its current needs and capabilities. For this reason, Ogoori plans to tailor its service to each customer. Informant 2 presented different service packages as a way to customize Ogoori's service to the needs of its clients. According to this informant, the company intends to offer three service packages based on different levels of plastic and circular business model knowledge. Specifically, one package concentrates on assisting customers who have knowledge of plastic but are not familiar with circular business models. The second package supports

clients who understand circular business models well, but not plastic. The third package is about guiding customers that are familiar with both plastics and circular business models. As such, each package has a different level of support, where Ogoori guides them step-by-step, including providing services such as product design or finding a manufacturing facility, as clarified by the second informant. This informant also stated that Ogoori provides their clients with the necessary tools and systems so they can offer services to the end-users, during the transformation to PaaS. Clients will, for instance, acquire tools to repair the final products themselves if required.

Informant 4 emphasized the appreciation towards Ogoori as the firm tries its best to minimize the difficulty in using its product:

“They do all the documentation, that's really important. And obviously, they're taking up the sea plastics, and they're turning into a product that we can use. They actually do the hard work [...]. From my point of view, we have the easy part here. So I think they're really trying to make it easy for us to use their product in a way.”

5.3.10 Risk reduction

Informant 1 mentioned that Ogoori will offer its customers a buyout option in which they can pay the firm to cancel the contract. As such, customers are not obligated to use Ogoori's material for the duration of the contract if they do not want to, thereby lowering the customer's risk when purchasing Ogoori's services

According to Ogoori (2021C), the firm is currently cooperating with a research center that investigates toxins in recycled plastic in order to ensure that its material is safe for use. By collaborating with this institute, Ogoori is able to generate a material safety data sheet outlining the chemical contaminants detected in such plastics. This collaboration also assists Ogoori in developing a sampling and removal procedure for environmental contaminants (Ogoori, 2021C). Further, the enterprise primarily employs polypropylene and polyethylene plastics which do not contain banned chemical additives found in some older plastics, but research is still required to confirm its material is free from them (Haave, as cited in Ogoori, 2021C). By conducting this activity, Ogoori can make sure that such contaminants are not allowed to appear in its plastic. However, there is still a lot of uncertainty surrounding microplastic toxicity, and how such plastic harms humans, or how the toxins can be accurately measured (Haave, as cited in Ogoori, 2021C). According to Ogoori (2021C), the enterprise wants to be transparent with

its clients. For this reason, Ogoori is constantly researching and gaining a broader understanding of toxicity through its research partner. The firm will also share its findings with clients to enhance confidence and safety in the company's upcycling process (Ogoori, 2021C).

5.4 Channels

5.4.1 Channel phases and Ogoori's own channels

When asked whether Ogoori contacts potential customers or waits for them to reach out, informant 1 replied that the company currently waits for them. There are two reasons for this, as revealed by the same informant. First, the customers come from different places, and second, Ogoori has been good at promoting its VP and being visible in the media and at conferences. Particularly, at the event "Sirkulærdagene" we got to observe how Ogoori presented itself in a conference-like setting. In its presentation, the company highlighted certain aspects of its operation, including its services and environmental commitment. Ogoori's representative also mentioned the value the company offers clients, such as marine plastic, the plastic's story, and helping others become circular. Further, in a pitch video on the firm's website, the enterprise emphasized aspects such as offering its material through MaaS and adapting customers' business models (Ogoori, 2020C). Moreover, the first informant claimed that Ogoori will actively start approaching its dream customers in the future, but currently does not have the capacity to take on more cases. As a result, the firm has enhanced awareness of its services thus far by promoting its VP and by being visible in the media and at conferences, and will raise awareness by approaching clients directly in the future. The next paragraph also demonstrates how the firm raises awareness of its services.

During the interview, it was indicated that the third informant frequently talks to potential end-users, resulting in new clients for Ogoori's direct customers. The same informant discussed why the enterprise displays customers' plastic products on its website and said it is a way of demonstrating that Ogoori's business model is truly functioning, and these plastic items are considered evidence that Ogoori's materials are actually being used by clients. Further, Ogoori has a social media presence, and it uses these CH to increase awareness of its business. Besides, these CH have functions that enable users to comment and contact Ogoori, making it easier for customers to engage and communicate with the firm. The following paragraph clarifies how Ogoori handles the remaining channel phases mentioned in section 3.2.3.

When asked how customers will be able to provide feedback on the company's products, informant 1 claimed that Ogoori will have an ongoing conversation with its customers, and receive feedback during these interactions. Hence, Ogoori will aid its customers in evaluating its VP through frequent interactions. Furthermore, clients can currently reach out to Ogoori via the company's website. This is how Ogoori enables customers to begin the process of purchasing its services, as well as how the business communicates with clients through its own channel. Moreover, Ogoori will only deliver the VP after customers have confirmed their willingness to change their business models, and when it comes to post-purchase services, Ogoori will, for instance, offer material replacements.

5.4.2 Partners' channels

In terms of Ogoori's partners advertising the firm, the third informant revealed that beach cleaners have Ogoori's logo on their boats, and are quite visible in social media. We also noticed that the beach cleaning organizations promote their collaboration with Ogoori on their social media pages. As such, these partners use their CH to advertise Ogoori's business. Furthermore, existing customers will also promote their products containing Ogoori's material. The fourth informant confirmed this, saying that they plan to promote both plastic products and Ogoori, but have not yet begun. The reason for this is that the final product is not yet complete. However, the informant indicated that it has begun to communicate about the project to business papers and its customers.

5.4.3 Sales team

Informant 2 was asked to share opinions on the sales team during the interview. This is something Ogoori does not currently have but will obtain in the future. According to the informant, the team's responsibilities will include imparting knowledge to clients on topics such as how to transition their business models into PaaS. The informant further claimed that the sales team will have a session as the first phase in the process to analyze customers' demands and capabilities, and thereafter guide them in accordance with their needs.

5.4.4 Marketing performance metrics

Due to organizational issues, Ogoori currently does not measure the engagement of potential customers on its social media and web pages, and the employee who would be in charge of this has not yet been hired. This was claimed by the first informant, who further explained that Ogoori does not track who becomes a customer or how many organizations become clients.

On the other hand, this informant stated that an Ogoori employee is in charge of determining how well the company's website and social media reach out to people and possible target groups.

5.5 Customer Relationships

5.5.1 Dedicated personal assistance

Ogoori intends to build a close dialogue relationship with its clients, in which the firm follows them one-on-one, as claimed by the first informant. By doing so, Ogoori enables the development of deep relationships with its clients over time and engages in the relationship "Dedicated personal assistance".

5.5.2 Long-term relationships

According to informant 1, Ogoori views the businesses it serves as partners rather than traditional customers, and has a goal to keep clients' products in the market for as long as possible. As such, building long-term relationships with customers is Ogoori's aim.

In another interview, informant 2 emphasized building long-term relationships with clients and claimed that Ogoori will support clients in every way to make the new business model easy to implement. This informant continued stating that when clients realize that the growth rate of their business will be directly linked to the level of nature cleaning, Ogoori assumes that clients will never want to go back to operating in the LE and want to prolong the partnership. As such, this is seen as the premise for creating a sustainable relationship between Ogoori and its customers.

5.5.3 Co-creation

Ogoori also focuses on cooperating with customers to co-create products. This was confirmed by informant 1 when asked if the firm will allow clients to co-create products. The informant went on to say that most of its clients know their own market and thus know what they want. In this case, Ogoori will be of assistance by delivering its services. On the other hand, in the situation that customers are unaware of their market, Ogoori will aid them in analyzing it and gathering user data.

5.6 Revenue Streams

5.6.1 Subscription model

The firm generates revenue through a subscription model, which was confirmed by informants 1 and 2, and the second informant indicated that its users need to pay an annual fee. This informant further expressed that the subscription model allows the firm to obtain recurring revenue while also dividing the cost for its customers. With the revenue model, the enterprise will take longer to generate profitability, as expressed by informant 1: “[...] *through the Material as a Service product, it will take time before we get profitability from the service. Since it’s a subscription service [...].*”

During the interview, the second informant further confirmed that Ogoori uses a subscription model, but not the pay-per-use model:

“[...] if our customer produces a bench, it's not that they have to pay 10 kroners every time they sit on the bench. So it's not like the electric scooters. It's renting for the whole period that they have it [...] so it's not per use, but it's per time [...] like the time that you're having it, so you pay the whole time you have (it).”

In another interview, informant 4 claimed that the subscription model is a good fit for Ogoori as it increases the level of commitment between the firm and its customers. This informant also added that the end-users will not have a problem with this revenue model.

5.6.2 Revenue from Maas, PCS, and funding

According to informant 2, Ogoori’s demand for revenue is satisfied by the combination of its two service products: MaaS and PCS. Ogoori's services are currently purchased by four customers, two for MaaS and two for PCS. This was confirmed by the second informant. Informant 3 also stated Ogoori currently generates revenue because one of its customers currently possesses a few tons of the firm’s material. Informant 4 also supported the statement of the second informant, by saying the firm they work at is committed to Ogoori and has already put money down.

As of now, the company receives almost all of its money from the public and private funding, and is significantly reliant on public funding, as expressed by informant 2. The third informant also confirmed this, claiming that Ogoori has gotten soft funding, which was seen as necessary for the company.

5.7 Key Resources

5.7.1 Physical resources

At the moment, Ogoori has practically no physical resources. This was confirmed by informant 2, who stated that the firm has no machinery, and that the machines used for plastic granulation are a service Ogoori purchases from another company. However, according to this informant, Ogoori currently rents a warehouse for storing plastic, which is considered the firm's only tangible asset. The second informant revealed that Ogoori intends to acquire its own warehouse in the future, but aside from this, no other physical assets will be owned by the firm.

5.7.2 Human resources

Informant 2 expressed that Ogoori's main resource is human resources. The first informant clarified that Ogoori currently plans to expand its human resources, which entails hiring more employees for different roles. Additionally, the second informant expressed that the firm concentrates on getting the team aligned so that everyone has the same overall goal and becomes more confident when talking about Ogoori's business model. The same informant further explained that if the team is uncertain of its offerings and meets with customers, potential clients will not want to work with Ogoori or use its services.

5.7.3 Intellectual resources

In terms of intellectual resources, informant 2 mentioned the brand and declared that Ogoori owns the copyright to its brand and logo. According to the same informant, the brand certifies that the plastic is Ogoori's, and because of this, the firm does not allow other companies to use the Ogoori brand on their plastic.

5.7.4 Financial resources

Ogoori's financial resources are assets obtained through investors and sponsors. During the interview process, both informants 2 and 3 reported that the firm receives a number of investments from different enterprises in the private and public sectors. For instance, the firm secured soft funding from Agenda Vestlandet to develop its business and supply marine plastic to the market (Ogoori, 2021A). Another article revealed that Ogoori secured funding from Fauna Experiment's funding loan to produce a second batch of marine plastic granulate for commercialization and future research (Ogoori, 2021B). According to the third informant, the soft funding that Ogoori received gave the firm complete control over the business. However, informant 1 admitted that Ogoori currently lacks funding and requires finance to continue its

expansion. While the company obtained soft funding, the third informant claimed that Ogoori must make itself independent from it, because it will not last indefinitely.

Aside from soft funding, the third informant revealed another option in which the firm can acquire money. This is through equity, and in this situation, Ogoori must meet the demands of the institutions that have invested, and it may be required to give back revenue earlier in comparison to soft funding.

5.7.5 Product design guidelines

Informant 2 stated that Ogoori has design guidelines for its customers' products that ensure the items can last for a long time. The informant further explained that the product's long-term viability allows Ogoori's clients to offer it to end-users numerous times. Ogoori also wants plastic products to stay in the loop for as long as possible since re-granulating the plastic is quite energy-consuming, as explained by the same informant. Apart from ensuring long-term functionality, the company is not too rigid when it comes to design guidelines, according to the second informant, and explained that is because Ogoori's ultimate goal is to support its customers and wants to make sure that clients have a product that fits the service model.

5.7.6 Tracking and tracing

As mentioned in 5.3.7, Ogoori is responsible for the plastic material throughout the whole value chain. Because of this, Ogoori has to have a technology that monitors the plastic. To follow the plastic's journey throughout the value chain, Ogoori teamed up with a technology company creating software to track the material (Ogoori, n.d.E). As previously disclosed in section 5.3.9, each customer's product is labeled with Ogoori's logo and has a built-in QR code. According to Ogoori (n.d.E), the QR codes will be integrated with the tracking and tracing software, which is known as a blockchain system. With such a system, data concerning the product should be available for everyone in the value chain and enables them to insert new information as the material moves through the chain. As such, data is collected and updated continuously (Ogoori, n.d.E).

5.8 Key Activities

5.8.1 Production

During the initial meeting with informant 1, it was shown in a presentation that the firm plans

to carry out the activity of production. This entails creating product prototypes for clients (Ogoori, n.d.D, p.5). Furthermore, Ogoori was founded to overcome the barrier of recycled marine plastic not being available in large volumes (Ogoori, n.d.E). Because of this, the enterprise has an aim of conducting the activity of delivering large quantities of marine plastic material.

5.8.2 Problem-solving and transforming customers' business models

According to the first informant, MaaS is divided into four phases: assessment, creation, implementation, and operation, and in the assessment phase, the firm determines how much of the transition to a circular business model the client can handle themselves. As mentioned in section 5.4.3, Ogoori's future sales team will meet customers and analyze their needs, before guiding them based on the appropriate package. In addition, informant 2 mentioned that its customers want to adapt their business model and be a part of the solution in dealing with the negative effects of the LE, and that they come to Ogoori for help to do so. As a result, Ogoori also engages in problem-solving activities during the assessment phase.

The first informant explained the other stages. In the creation phase, Ogoori will, for instance, conduct activities of concept and service development. The activities in this phase are considered by the informant to be essential to creating fully finished and serviceable products. The next phase is implementation, in which the company creates the first actual objects and integrates each of them with a unique QR code. As mentioned in section 5.7.6, these codes are connected with Ogoori's track and trace technology. This phase also includes a variety of testing with the customer's distribution partners, and one of these is the testing of a return system. The informant explained that this system ensures that materials get returned to Ogoori even if they are lost from the value chain. The final stage is the operation, and in this phase the client can subscribe and receive all the additional services that help them deliver services to their own customers and end-users.

5.8.3 Network and digital passport that traces the materials

Ogoori's value chain has been labeled a value chain network (Ogoori, n.d.B). This network will be used by the company to link clients with designers (Ogoori, n.d.D, p. 5). Hence, through the network, the enterprise will, for example, engage in the activity of connecting certain value chain actors together. Further, Ogoori's customers can use the digital passport to follow the plastic as it moves through the value chain, as previously disclosed. As a result, the digital

passport controls the flow of materials while also linking all the network participants.

5.8.4 Ensuring available material and offering material replacements

According to informant 1, Ogoori will know when its clients require more material by keeping regular contact with them and monitoring their data logging. By doing this, Ogoori is able to ensure that MaaS customers always receive the material they need. Ogoori is also developing a buffer through the PCS service, where it may store material that needs to be processed before being delivered to customers, as mentioned by the same informant. However, this informant also expressed that Ogoori can create a buffer of upcycled or re-granulated material that may be provided immediately. Hence, feeding a buffer of either unprocessed or processed plastic material is another activity the firm does or will do to ensure material availability. Furthermore, it was previously stated that if Ogoori becomes aware of a customer's need for a part replacement, the firm will carry out the activity of material replacements.

5.9 Key Partnerships

Plastic recycling covers a wide range of procedures, from the collection of plastics, sorting, granulating, and so on. According to informant 2, Ogoori outsources the majority of the aforementioned procedures. The firm has made an agreement with KP in the value chain to ensure material supply and recycling (Ogoori, n.d.E). The following sections will explain a few of these partners.

5.9.1 Beach cleaners

Informant 3 mentioned beach cleaners as a strategic partner in Ogoori's value chain. They are voluntary organizations that clean up the ocean by collecting plastics. The third informant mentioned that Ogoori has already established agreements with such organizations, and is currently attempting to obtain the same agreement with more voluntary associations. The informant clarified that the agreement involves that Ogoori can order plastic whenever it wants and has the right to first refusal. This informant explained that with such agreements, the voluntary organizations have to supply the plastic to Ogoori first, and in the case that the firm denies the offer, the beach cleaners can decide what to do with it. The second informant clarified that the beach cleaners may put the plastic that does not go to Ogoori into incineration as they only want to get rid of it. Because of this, the voluntary organizations give Ogoori the plastic for free, according to this informant.

Informant 2 also indicated that the beach cleaning associations play an important role in the PCS service, as they implement beach cleaning activities, and will be financed to extract marine plastics through this service.

5.9.2 Technology company, researchers, and scientists

As previously disclosed, Ogoori collaborates with a technology company to obtain the system for tracking and tracing plastics. This is an important partner for Ogoori to ensure that the plastic and its origin are monitored. According to informant 3, Ogoori also cooperates with researchers and scientists. They are in charge of making reports and documents, creating datasheets for each plastic batch, and sending plastic samples to research centers (Ogoori, n.d.E).

5.9.3 Ogoori's customers

As previously stated in section 5.5.2, Ogoori considers its clients as partners, rather than traditional customers. Ogoori's customers are also a vital partner in ensuring that Ogoori keeps its commitment to making nature clean. The reason is that the customers look after its material when they are using it, according to the third informant. In addition, when the marine plastic is integrated into clients' products, it guarantees that the material is reused and does not re-enter nature (Ogoori, n.d.E).

5.9.4 Producers

Ogoori's customers are companies that use its plastic material to create products and deliver them to end-users, as mentioned in section 5.2.1. However, not all businesses have their own factories to produce such products. There are some firms that only own the products, design the items, and set up marketing campaigns to advertise products, but they outsource the production activity to other producers. Such producers are Ogoori's partners, which means they manufacture products for Ogoori's direct customers, but the products are marketed under the name of the customer.

5.9.5 Funding partners

Investors and sponsors are also seen as one of Ogoori's KP. Informant 3 revealed that Ogoori has submitted applications to obtain soft funding from such partners, and emphasized that the firm has received funding as a result of Ogoori being a competent organization that does its research, but also because of luck. However, Ogoori currently still requires funding to continue

developing the business, and informant 3 stated the firm is currently working on an investor pitch to acquire more funds.

5.9.6 Other partners

In addition to the aforementioned partners, Ogoori also cooperates with other firms to produce clean plastic materials. The firm partners with businesses to perform upstream activities such as plastic storing, sorting, cleaning and granulating, transportation, distribution, and so on (Ogoori, n.d.E).

5.10 Cost Structure

5.10.1 Value-driven business model, fixed and variable costs

Ogoori's business model is value-driven, as the company's motivation is to clean up nature and reinvest its profits in more cleanups, rather than to earn a profit for itself (Urheim, 2020). The fourth informant also confirmed this by stating that Ogoori is not running its business solely for commercial purposes but to do a good deed.

During the interview, informant 2 mentioned a number of the firm's expenses. When queried which cost has the most impact on the firm, the informant responded: *"That is human resources, I mean, just paying the hours of the work actually done in the company is the biggest cost."* The cost of human resources is expected to remain consistent and vary depending on the activity in which the employees are working on (Ogoori, n.d.F). As a result, this cost is both fixed and variable.

Ogoori currently rents its warehouse but aspires to have it on its own, as previously stated. The cost of the storage was not disclosed, but it is indicated that Ogoori's expenses for renting facilities, machinery, and equipment will continue to vary or stay constant depending on the activity they are involved in (Ogoori, n.d.F). Further, the second informant expressed that the buffer of material is also leased for the same monthly amount.

5.10.2 High cost of conducting the service model

When it comes to being cost neutral, informant 3 stated:

"[...] The question of when we reach the neutral point for the material is not the price that we're getting for it, but it is whether we'll be cash neutral on that product in two

years or 1 1/2 years or 2 1/2 years. But we will be cash neutral at some point on this because of the rental model [...].”

Further, Ogoori claims that its business is expensive, due to the high cost of recycling and distributing plastic (Ogoori, n.d.E). The first informant also confirmed this by stating the most expensive parts are the washing, sorting, re-granulating, and shipment of the plastic. Whereas informant 2 expressed human resources to be the company's most expensive resource, but that the cost of processing plastic is extremely high. To be able to supply its services, Ogoori also experiences expenditures related to, for instance, production and recovery, as presented in a video pitch (Ogoori, 2020B). Due to the aforementioned factors, as well as the fact that the enterprise will take time to become profitable, Ogoori's model has a high initial cost.

5.10.3 Other costs

As noted by the first informant, other costs that affect Ogoori's business are those associated with software Ogoori (n.d.E) clarified this further by illustrating that the corporation incurs expenditures when implementing blockchain technology. As a result, the firm has technology-related expenses.

The second informant mentioned that the company encounters expenses related to R&D, especially in the current period because the firm is new. Furthermore, Ogoori also has advertising costs (Ogoori, n.d.G). For this reason, Ogoori has expenditures related to CH.

It was confirmed by Ogoori (n.d.F) that the enterprise has pilot tests as a company expense, as the firm has depicted charges for service piloting and the pilot activity with partners. Further, Ogoori also has design expenses, such as service design (Ogoori, n.d.F).

<p>Key Partnerships</p> <ul style="list-style-type: none"> <input type="checkbox"/> Beach cleaners: offers the service of environmental cleanups and plastic collection for free. Ogoori wants to acquire more of these partnerships <input type="checkbox"/> Technology company: provide blockchain system to track and trace plastic <input type="checkbox"/> Researchers and scientists: make reports, create data sheets for plastic batches, and send plastic samples to research centers <input type="checkbox"/> Customers: use Ogoori's material in its own products <input type="checkbox"/> Producers and manufacturers: produce products for customer which does not have its own factory <input type="checkbox"/> Funding partners: provide capital to maintain and develop the firm's business <input type="checkbox"/> Other partners: provide other upstream activities such as sorting, granulating, transportation, and distribution 	<p>Key Activities</p> <ul style="list-style-type: none"> <input type="checkbox"/> Produce prototypes for customer's products & deliver large amounts of marine plastic <input type="checkbox"/> Solve customer's problem and follow four phases to enable the conversion of client's business model and to supply its service offerings <input type="checkbox"/> Connect certain network partners together <input type="checkbox"/> Manage the movement of plastics with digital passport <input type="checkbox"/> Assure available material (through data logging and material buffer) <input type="checkbox"/> Executes material replacements 	<p>Value Propositions</p> <p>Main value proposition: impact positively on the environment by removing marine plastic</p> <p>Material as a Service:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide access to marine plastic <input type="checkbox"/> Supply datasets on environmental impact <input type="checkbox"/> Story of the marine plastic <input type="checkbox"/> Quadruple bottom line: <ul style="list-style-type: none"> ➢ Planet: clean nature ➢ People: make others perform good actions for the environment ➢ Profit: fund cleanups by using its profit ➢ Purpose: protect future generation from current environmental issues <input type="checkbox"/> New model that offer services and clean nature as clients develops <input type="checkbox"/> Reduce social pressure for customers and end-users <input type="checkbox"/> Ingredient brand and build up the trust among clients <input type="checkbox"/> Customize services: 3 packages for business model transformation, and offer tools to assist its customers in offering services to end-users <input type="checkbox"/> Decrease the risk of subscribing to its services with buyout option and removal of toxins in the material <input type="checkbox"/> Provide material replacement to enhance the customer service 	<p>Customer Relationships</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pursue the relationship of dedicated personal assistance by maintaining a close dialogue with customers <input type="checkbox"/> Develop a long-term relationship with clients and considered them as partner, rather than traditional customers <input type="checkbox"/> Collaborate with customer to create products 	<p>Customer Segments</p> <p>Material as a Service:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Businesses that have a brand, sustainability desire, and physical products <input type="checkbox"/> Companies wanting to use plastic <input type="checkbox"/> Organizations that are not producing its own products <input type="checkbox"/> Firms with end-users such as large corporations, municipalities, schools, and parks <input type="checkbox"/> Enterprises willing to change their business model into Product as a Service
<p>Key Resources</p> <ul style="list-style-type: none"> <input type="checkbox"/> Physical resources: warehouse (rented from supplier, consider to have its own in the future), do not have other physical assets <input type="checkbox"/> Human resources: Ogoori's staff, which it is currently expanding <input type="checkbox"/> Intellectual resource: copyright to the brand and logo <input type="checkbox"/> Financial resources: have a few sponsors and investors but still requires more for increasing its capital <input type="checkbox"/> Product design guidelines to ensure that customer's products are long-lasting and suitable for a service model <input type="checkbox"/> Technology resource: blockchain technology to track and trace plastic 	<p>Plastic Capture and Storage:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide Environmental, Social Governance datasets that customers use to show they assist in cleaning the environment 	<p>Channels</p> <ul style="list-style-type: none"> <input type="checkbox"/> Reach out to customers by: <ul style="list-style-type: none"> ➢ Increase awareness of Value Proposition (VP) by advertising it, appearing in media and at conferences, informing others about its operation, showcasing plastic products on its website, and pursuing dream clients in the future ➢ Aid customers in evaluating VP through frequent interactions ➢ Allowing clients to acquire its material by contact the firm through its website or social media pages ➢ Delivering VP after it has been confirmed that businesses are willing to change their business model. <input type="checkbox"/> Offering post-purchase services <input type="checkbox"/> Partners' channels: promote Ogoori on their social media and business papers <input type="checkbox"/> Future sales team that will transfer knowledge to clients 	<p>Plastic Capture and Storage:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Firms without need for plastics that wish to contribute to a clean environment and have high sustainability goals 	<p>Revenue Streams</p> <ul style="list-style-type: none"> <input type="checkbox"/> Subscription model, charging customers annually <input type="checkbox"/> Private and public funding
<p>Cost Structure</p> <ul style="list-style-type: none"> <input type="checkbox"/> Value driven business model <input type="checkbox"/> Fixed costs: staff, property, machinery, supplies, and buffer of material <input type="checkbox"/> Variable costs: staff, property, machinery, and supplies <input type="checkbox"/> High cost of operating with the service model (expenditures with recycling, distribution, recovery of materials) <input type="checkbox"/> Technology, research and development, channels, pilot tests, and design costs 	<p>Revenue Streams</p> <ul style="list-style-type: none"> <input type="checkbox"/> Subscription model, charging customers annually <input type="checkbox"/> Private and public funding 	<p>Plastic Capture and Storage:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide Environmental, Social Governance datasets that customers use to show they assist in cleaning the environment 		

Figure 3: *Ogoori's business model*

5.11 Ogoori's strengths and weaknesses

Informant 4 was inquired about its viewpoint of Ogoori's strengths, where it replied that it believes the firm's strength is its commitment to sustainability and that the firm does not operate the business just to generate revenue. The informant also mentioned that Ogoori's business location is close to them, and considers this another strength. Whereas in terms of weaknesses, Ogoori is currently still in the internal development stage, and thus the rate of plastic waste collection is slow, according to informant 2.

5.12 Challenges with Ogoori's business model

The biggest challenge with Ogoori's business model, is to explain the model while triggering customers' desire to transform their current model into a circular model, according to the third informant. This informant also elaborated that MaaS does not exist in a linear economy, and because of this, Ogoori requires more time to persuade enterprises to join and modify its business model.

In order to run the business with recycled plastic, Ogoori's value chain always requires a complete reverse supply chain to ensure that all plastic items are completely collected after usage. This poses a challenge for Ogoori, according to informant 3. This is also a classic issue with all waste management systems, and with these systems, waste can still leak into nature, according to the same informant. This informant further clarified that reverse logistics is extremely difficult to master and demands large financial investments.

5.13 Ogoori's opportunities

During the interview, the third informant mentioned that Ogoori has noticed a rising acceptance that people do not have to buy an item or service to enjoy it, and that this viewpoint is spreading globally. Because of this, the informant expressed that Ogoori is unconcerned about losing potential clients who refuse to adapt their business model and instead want to sell their product. The informant also believes that Ogoori will benefit from this viewpoint in the near future.

The fourth informant expressed their opinion on future opportunities in the marine plastic sector, stating that this sector is the future. This informant also claimed that enterprises on the West Coast of Norway, such as the maritime industry, seek to use ocean plastic in their

equipment. It was also revealed by informant 4 that the company it works for is aware of the issue of plastic waste because it conducts business on the Norwegian West Coast.

5.14 Threats to Ogoori's business

Ogoori does not seem to have any rivals at the moment, as expressed by informant 2. However, as stated by the same informant, Ogoori may face competition from rivals in the LE. The informant went on to explain that there is a risk of businesses gathering ocean plastic but not implementing it in the same way as Ogoori. According to the same informant, these enterprises can potentially efficiently create and sell plastics, as well as compete with Ogoori's price. Thus, this informant concluded that it is necessary for Ogoori to grow in the next few years.

The third informant also mentioned the risk of potential clients choosing other options than Ogoori. The informant revealed that there is a lot of ocean plastic on the market and that it is easily accessible. Further, this solution does not require a shift in the business model, and because of this, companies may choose this option instead of Ogoori, according to informant 3. As a result, the company experience a challenge in growing its business, as noted by the same informant.

The fourth informant also specified a potential threat that can affect Ogoori's business. Specifically, the plastic material may contain a lot of toxins. The same informant stated that the material is currently being tested for toxins, and that it is essential for their firm to incorporate materials that are free from toxins in their product.

6.0 Discussion

In this section, we will first conduct a SWOT analysis of the firm, based on the gathered data. Thereafter, we will discuss the two sub-questions, and finally answer this master's thesis research question.

6.1 SWOT analysis

6.1.1 Strengths

6.1.1.1 Sustainability-centered

One of Ogoori's strengths is associated with its service model in terms of MaaS. It has two aspects: sustainability and commercial viability. The firm's focus on sustainability includes the

enterprise's efforts to clean up the environment, which can cause less strain on future generations in terms of decreased plastic pollution. As noted in section 5.3.1, removing plastic from nature is also believed by the general public to be beneficial for not only the environment but also for the development of other species. To be more specific, the removal of marine plastic results in clean water supplies, thereby allowing the marine organisms to survive and prosper. In addition, water is essential for human survival. Therefore, the protection of water resources is the safeguarding of human life. For this reason, environmental cleanup not only protects future generations but also ensures that current generations can afford to maintain and develop. Thus, just by conducting its business, Ogoori can enhance its reputation and become positively associated by the public and other enterprises.

The firm is not running its business solely for the purpose of making money but will use its profits to fund additional cleanups. This can also help Ogoori establish a more favorable reputation. Such a reputation is valuable because it can attract new clients, end-users, and investors. In addition, when a company becomes Ogoori's customer, end-users of the final product, or investor, it becomes affiliated with the firm, and the positive image of Ogoori can be transferred to it. As a result, more companies may want to be associated with the firm.

6.1.1.2 Obtaining revenue with the MaaS and PaaS model

Referring back to section 5.6.2, Ogoori currently earns revenue with the MaaS business model. In addition, its clients also generate income with the PaaS model, as section 5.4.1 mentioned end-users are using the plastic product of current customers. For these reasons, both Ogoori and its customers obtain revenue with the service models. Further, Ogoori might also help its consumers acquire even more earnings in the long term. There are two factors that together may contribute to this. First, neither Ogoori nor its clients will sell their offerings, and will thus obtain recurring revenue. Second, the client's plastic products are designed to last for a long time. These factors indicate together that in ideal circumstances, direct customers can offer their product and earn income for many years. Clients must continue to purchase Ogoori's services in order for them to continue to provide services to end-users. As such, Ogoori has the potential to earn recurring income from each customer for years. However, customers must be willing to pay for the value the firm provides, as mentioned in section 3.2.5. Furthermore, it has been claimed that the more a company enhances its services and quality, the more clients are willing to pay for them and become loyal customers (Carson et al., 1998, p. 28). Loyal customers are satisfied with a company's services and are more likely to repurchase them, which can affect a

business's profitability (Anderson et al., 1994, p. 54-55). Therefore, the prospect of generating income is reliant on both Ogoori's and its direct customers' ability to satisfy their own clients.

6.1.1.3 Operating with a differentiated model

Ogoori's model can give the firm an advantage over companies offering ocean plastic through a sale or just a rental approach, because offering services makes Ogoori distinct. Customers solely receive the plastic with a sale or rental model, but with Ogoori's approach, clients will also receive other services. Thus, its model offers customers something new and can catch the interest of companies who want more value than the paying price. Furthermore, enterprises can only receive Ogoori's services through the company. As a result, there are no comparable companies. This can make Ogoori stand out in the market, and become a preferred choice among companies wanting to employ ocean plastic material in their products.

6.1.1.4 The PCS service

The PCS service is considered to be another strength of Ogoori, as it provides benefits to three parties. Firstly, it provides an improved reputation to customers. The reason is that the clients will contribute to a cleaner nature, which can make others associate them in a positive way. As such, using this service may enable them to attract even more customers. Secondly, Ogoori is able to attract even more clients, as PCS expands the target customer base to companies that do not require plastics but wish to contribute to a clean environment. Moreover, Ogoori can receive more materials to run its business through this service. Thirdly, the PCS service has the potential to enhance the relationship between Ogoori and beach cleaners. It is because Ogoori uses this service to pay beach cleaners for collecting plastics. Although they are volunteer organizations that may not require payment, this activity might be considered a method of showing appreciation for them, and it is believed that they deserve to be rewarded for their contribution. As such, this relationship may be strengthened and prolonged.

6.1.1.5 Agreement with beach cleaning organizations

Ogoori's relationships with particular beach cleaning organizations ensure that the company has the right to first receive and refuse materials, and the firm is currently attempting to achieve this agreement with other beach cleaning associations. This agreement entails that the organizations must offer the material to Ogoori right after it has been cleaned up, giving the enterprise an edge over others who seek the same material.

6.1.1.6 Blockchain technology

To certify that its plastic is cleaned out of nature, Ogoori employs blockchain technology. Using this technology, Ogoori is able to show that itself and its partner are actually cleaning up the seas and shorelines. Blockchain can also help the firm be able to tell the plastic story. As noted in section 5.3.3, the story begins when the plastic waste is collected at the beach until it is completely recycled and brought into the market again. Utilizing this technology is regarded as a strength, since it provides potential and current customers, as well as end-users, with evidence that plastic products contribute to a clean environment. As a result, enterprises seeking confirmation that the material is actually marine plastic may feel more at ease and desire to employ it.

6.1.1.7 Ingredient brand

Another strength is Ogoori's ingredient brand, which is meant to improve the impression of the direct customers' brands, increase awareness of them, as well as deliver higher value to end-users, as noted in section 5.3.8. The ingredient brand has the potential to increase clients' brand image since it guarantees the firm's material is marine plastic. As such, clients' brands can be associated with the removal of plastic from nature, which is considered to be positive. An ingredient brand can also increase the reputation and draw attention to clients' products, as an ingredient brand can be a signal of good quality (Pinar & Trapp, 2008, p. 34). As such, it is assumed that when others see the logo of Ogoori on the plastic products, they will perceive the client's brand to be of high quality. Furthermore, improved quality can make businesses more willing to pay for Ogoori's services, as mentioned in section 6.1.1.2. This indicates that they have trust in the brand, even if they have never used it. Besides, by focusing on the properties of the material, an ingredient brand can distinguish businesses from competitors (Desai & Keller, 2002, p. 73). For this reason, if there are other companies that implement a similar business to Ogoori, the firm can still stand out due to its brand. Because of the positive associations towards the ingredient brand, Ogoori can enhance its image, which can influence others to see its employees in a positive light as well. As such, the brand can create engaged employees and turn Ogoori into a desirable workplace.

6.1.1.8 Subscription model

The implementation of the subscription model is also regarded as a strength, even though this revenue model will cause Ogoori to take longer to make a profit. With this model, Ogoori will

earn income the entire time clients possess its material, and it will get paid annually. As a result, Ogoori will have predictable revenue, making it easier to plan for future growth. The revenue model also divides the expense for the customer, meaning that the price becomes less costly for them. Therefore, this payment model allows organizations that refuse to pay a high initial cost to become a customer. In addition, as it was established that the subscription model may strengthen customers' dedication to Ogoori in section 5.6.1, the firm has the possibility to acquire long-term clients.

6.1.1.9 Human resources

Human resources are the next aspect that could be seen as a strength, as it has been stated in section 5.9.5 that the firm considers itself to be competent. To conduct the new model of MaaS, as well as to help other businesses become more circular, Ogoori requires a capable and professional staff. Furthermore, Ogoori has already begun to operate its business and deliver its services. For this reason, the employees are considered experts who have accumulated the necessary knowledge and skills to deliver the services to Ogoori's customers. However, the staff is on their way to achieving the full knowledge and skills to conduct the circular business model and perform related tasks with the purpose of delivering the best service to the customer. As a result, Ogoori is in the process of hiring more employees and building the team's confidence in its business model.

6.1.1.10 Diversifying service packages

Ogoori intends to provide customers with different service packages. This is evaluated as a strength of the company because it can assist customers in converting their business models to different degrees. By creating various packages, adapting them based on clients' needs, as well as guiding clients through the process, Ogoori is making the shift more comfortable and easier for MaaS clients. In addition, the three service packages also enable the firm to reach out to different kinds of business customers. Diversifying service packages generates a premise for Ogoori to increase its popularity, thereby creating greater influence and increasing competitive advantages in the market.

6.1.2 Weaknesses

6.1.2.1 Slow rate of plastic collection

One weakness of Ogoori that has been mentioned in 5.11 is that the company has a slow plastic collection rate. At the current rate of collection, Ogoori is still not able to gather all the plastic waste provided by the beach cleaning organizations. For this reason, there is still the possibility that some beach cleaners put plastic waste into incineration. This causes toxic gasses to be released into the environment (Alabi et al., 2019, p. 4). It also wastes resources that have the potential to be turned into recycled plastic material. For this reason, if Ogoori does not speed up its plastic collection, the company is at risk of losing potential material.

6.1.2.2 Lack of commercial aspect when presenting the business model

As previously mentioned in 5.4.1, after attending the event “Sirkulærdagene” and watching pitch videos on Ogoori's website, we found that Ogoori mentioned the environmental aspects of its business, but not the commercial side. It is understandable that the organization does not necessarily focus on this when presenting its company to students, but neglecting to do so when presenting to potential customers can be a disadvantage. Ogoori concentrates on the B2B market, and thus its customers are corporations. To be able to survive, a business needs to earn income and profits, as previously mentioned in section 1.3. Therefore, it can be assumed that potential clients will also pay attention to commerciality, besides the purpose of making the environment more sustainable. As a consequence, mentioning the commercial aspect to a small extent might reduce the interest of businesses, leading them to conclude that Ogoori's idea is not truly viable for them.

6.1.2.3 Not developing an adequate amount of service packages

The current service packages that Ogoori intends to develop are still limited. For example, to our knowledge, Ogoori has not made plans to provide a service package for enterprises that neither have knowledge of circular business models nor plastic production. This reduces the ability to reach out to such customers as well as expand the market segment. As a result, it decreases the competitiveness of Ogoori in the market. Product diversification will help Ogoori to achieve many benefits. The more diversified its service packages are, the more potential Ogoori has to approach customers with different abilities and needs. Ogoori can thereby increase its competitiveness in the market while accelerating the process of transforming other businesses into a CE by developing a fourth service package.

6.1.2.4 Not actively reaching out to potential customers

Referring back to section 5.4.1, Ogoori is currently waiting for customers to have demands and come to Ogoori by themselves. This is considered a weakness in the company's marketing strategy for many reasons. Waiting will cause Ogoori to take longer to reach out to clients, and could, as a result, miss opportunities of acquiring more customers. In addition, waiting is costly, because while waiting for customers, the business still has to operate and pay for different types of expenses, such as costs for human resources, or the cost of renting necessary assets. Besides, this marketing strategy is effective for brands that already have a good reputation in the market. Such businesses are well-known, and the reputation they have established encourages potential customers to reach out. Given that Ogoori is still relatively new and has yet to establish itself on a large scale, this strategy may not be the most successful.

6.1.2.5 Inadequate capital

Currently, Ogoori does not have sufficient capital to grow its business, which is another weakness. Capital is the starting point of any business. As such, it plays an important role in the existence and development of any company, including Ogoori. Financial resources are extremely vital for the Ogoori because it outsources multiple activities, such as cleaning up the shorelines, sorting, granulating plastic, and so on. Without the necessary financial resources, Ogoori can suffer a series of losses. For instance, Ogoori may experience that it does not have enough budget to make on-time payments to its partners. This could further implicate delays in supplying plastic to customers. As a result, the firm is unable to complete the contract with customers punctually, resulting in a breach of customer trust. To avoid such potential losses, Ogoori is seeking sponsors in order to increase its capital.

6.1.3 Opportunities

6.1.3.1 Rising acceptance of no ownership models

The increasing acceptance of customers not requiring ownership of what they desire has been mentioned as one opportunity in section 5.13. By operating with the service model, Ogoori only offers access to materials, since they must be returned to the enterprise at some point. As such, this model can attract businesses that have no need for material ownership and do not want the responsibility of the material after use. Moreover, because the appeal of having no ownership is rising globally, Ogoori may see a surge in interest for its materials, also among companies from other countries. However, to achieve this, it is essential that Ogoori becomes known worldwide, which may require it to reach out to potential clients and do this all over the world.

6.1.3.2 More companies are interested in ocean plastic

The next opportunity is that there are enterprises on the Norwegian West Coast that want to employ marine plastics in their equipment. These companies could thus become Ogoori's direct clients. Although firms on the West Coast were specifically emphasized in 5.13, it is expected that more businesses throughout Norway, as well as in other countries, wish to use marine plastic material. Because of this desire, Ogoori has the possibility of extending its customer base. However, these organizations may be unaware of Ogoori's services, since the firm was recently established. As a result, this opportunity may only be seized if Ogoori contacts them to introduce its business and the concept of MaaS.

6.1.3.3 Businesses see the impact of plastic waste and want to support Ogoori's business

When presenting on environmental protection and cleaning up nature, Ogoori also has the opportunity to easily convince potential companies that operate near the sea to join its value chain. Particularly those on the Norwegian West Coast, who, like the firm of informant 4, may have seen and experienced how plastic waste damages the marine ecosystem. As a result, they are more likely to support Ogoori's efforts, and their desire to collaborate with the company increases.

6.1.4 Threats

6.1.4.1 Competitors in the linear and circular economy

Being the first company to implement the MaaS business model, Ogoori has no direct competitors at the moment. Companies in the LE can not be considered direct competitors of Ogoori, as they run their business in quite a different way. However, some of them are seen as indirect competitors for the knowledge and experience they have accumulated in the plastic industry for many years. These businesses have also acquired knowledge from predecessors in the same industry. Because of that, they are able to offer plastic products of high quality but still keep an affordable price for customers. As such, potential clients can favor those linear companies over Ogoori. Customers may also favor businesses in the LE, as they get the option to purchase plastic material and do not have to change their business model.

The plastic in the sea is ownerless. It means that anyone has the right to collect them as long as they have enough resources and gathering capacity. When other companies become aware of this and Ogoori does not accelerate the speed of plastic collection, Ogoori might lose the source

of materials to these indirect rivals. Moreover, the linear companies have the potential to become direct competitors to Ogoori if they completely transform their business model into a more circular one. The fact that they may have more plastic manufacturing experience combined with a larger pool of resources could make them become a major threat to Ogoori.

6.1.4.2 Plastic material containing toxins

There is an obstacle regarding the quality of the plastic materials that Ogoori supplies to its customers. This issue was mentioned by one of its customers and is presented in section 5.14. Ogoori's customers are typically businesses that have their own standard requirements for the products they offer to their own customers, and they cannot manufacture products that can have bad consequences for the end-user. If their plastic products end up containing harmful ingredients, this might lead to them losing their own customers, and some of their revenue, as well as experiencing a decrease in brand image. Therefore, they might be concerned about whether the company's plastic materials are safe enough to further produce and use. Ogoori is currently conducting toxicology testing with the aim of removing harmful chemicals from its materials. This activity is considered a method to increase the quality of Ogoori's plastic. However, there is a concern that its materials still contain toxins due to the limited knowledge of toxicity. This results in the firm having the risk of its plastic not being cleaned and fully safe for the customer and end-user. For this reason, Ogoori may lose a number of potential customers because they are hesitant about the quality of its materials.

6.1.4.3 Lack of experience and knowledge due to the novelty of the business model

Another weakness comes from the fact that MaaS is a completely new business model and that Ogoori may be the first to implement it. This entails Ogoori lacking the experience in conducting this model because there is not any predecessor who can pass on the experience to the enterprise. For this reason, Ogoori is forced to both learn and experience itself in order to determine the best approach to manage the business, which can take a lot of time. Further, it causes a higher risk of failure compared to other business models.

6.1.4.4 Challenges with reverse supply chains

Another challenge involves the reverse supply chain. A reverse supply chain is used to collect, recycle, and redistribute plastic products when they are no longer usable. Until now, the reverse value chain is still being developed to create a perfect system for collecting waste completely. This is a complex issue and requires a lot of financial investment, as noted in section 5.12. The

current systems have not yet reached full effectiveness. The proof is that plastic waste is still found when the volunteers clean up the beach. This leads to difficulty for Ogoori. With the current reverse logistics systems, there is still a risk that the customer does not fully return the plastic material to Ogoori after a long time of use.

6.1.4.5 Challenges of finding appropriate funding partners and the threat of losing business control

There is a threat that derives from Ogoori's lack of financial resources. Ogoori is currently in the process of searching for funding to continue running its business. However, this task is not easy, and there is still a probability that Ogoori may not be able to find suitable sponsors. It can lead to the risk that Ogoori will have to sell some shares in order to raise the capital for the business. This puts Ogoori in danger of losing control of the business since the shareholders will have the right to govern the company's operations.

6.1.4.6 Companies are unwilling to transform their business model

Once the customer participates in Ogoori's value chain, they will not be able to continue doing business with a linear approach, and must transform their business. This might affect potential customers' decision to join the value chain. Some firms have been implementing current models for a long time, and are likely to fear and reject conversion. It is because business model transformation entails a huge change for companies. In addition, it demands the use of a lot of resources as well as financial investments, and it is also not certain that adopting the new model will work effectively. Besides, companies may be concerned about Ogoori's expertise for the reason that the model of Ogoori and the one customers are going to adopt are different. This increases the level of uncertainty for the enterprises and makes them rethink collaboration even though they are interested in Ogoori's idea.

Strengths

- Considers both sustainability and commerciality
- Running a model with unique offerings
- Plastic Capture and Storage service
- Agreement with voluntary organizations to be prioritized in receiving plastic material
- Blockchain technology provides evidence that Ogoori's plastic is cleaned out of the marine environment
- Ingredient brand makes the firm stand out as material supplier
- Subscription model guarantees a predictable revenue source
- Competency in running the Material as a Service model
- Offer various service packages to transform clients' businesses

Weaknesses

- Slow rate of collecting plastic waste
- Less focus on the commercial aspect when presenting the business
- Not providing a service package for companies with no circular business model or plastic knowledge
- Waiting for customers to reach out, rather than contacting them
- Lacking sufficient capital

Opportunities

- Global rising acceptance of not requiring ownership among customers
- Companies, especially on the Norwegian West Coast, want to employ marine plastic in their products
- Obtain customers that operate their business by the sea, as they witness the damaging effects of plastic waste

Threats

- Indirect competitors in the linear economy
- Potential future direct competitors
- Uncertainty in plastic quality due to toxicity
- Lack of previous knowledge in terms of Material as a Service
- Challenging to fully return plastic material in reverse supply chains
- Loss of business control as a result of selling shares to raise capital
- Unwillingness among potential customers to transform their business model

Figure 4: SWOT analysis of Ogoori

The SWOT analysis will be used to determine other actions Ogoori can take to enhance its likelihood of achieving profitability. While not all components of this analysis will be utilized to answer the research question, we believe it is still beneficial for Ogoori to have an overview of how feasible its business is. This overview includes internal and external elements of its present situation, as well as those in the future. Through this, the company may gain insight into how it can develop further.

6.2 Discussion of sub-question 1

This section will answer the first sub-question:

Which value can companies create and deliver through adopting Material as a Service?

The section will be divided between Ogoori's current and potential value creation and delivery. We will only examine the elements that we consider are most relevant to improving the organization's potential to generate profits.

6.2.1 Current value creation of Ogoori

As previously stated in section 3.2, value creation is about increasing and developing value from the demands of customers. This corresponds with the BMC building block VP, as both aspects concentrate on creating value for customers. It has been discovered in section 5.3 that Ogoori currently provides customers with a variety of services through MaaS, thereby creating value in numerous ways.

6.2.1.1 Value through the material, environmental data sets, and stories

Ogoori supplies clients with access to marine plastic material, which adds value by satisfying the needs of those that want to use this type of plastic in their products. This was expressed in section 5.2.1. Furthermore, the organization delivers data sets on the product's environmental impact, as well as stories from the plastic cleanups to clients. Such data verifies that Ogoori's direct customers actually contribute to a cleaner environment. This generates value, as there is an increasing demand and expectation from society that corporations must contribute to a more sustainable future (Gunarathne & Lee, 2017; Schönherr et al., 2017 as cited in Galleli et al., 2021, p. 3). By being able to verify that they are cleaning up the environment through their

plastic products allows the customers to satisfy society's expectations. As such, the data can give Ogoori's clients a more positive image.

6.2.1.2 Safety of recycled material

Improving the safety of its plastic materials is one way Ogoori reduces the risk for its clients, thereby creating value. Guaranteeing material safety is important, as Ogoori's client emphasized the risk of its plastic material containing toxins. A study on recycled plastic also revealed a similar finding. The study questioned 258 people about their opinions regarding products made of ocean plastic (Magnier et al., 2019, p. 84). The research found that the participants were generally positive towards such products, and had positive expectations in terms of, for instance, quality and functionality, but they also associated the products with low safety (Magnier et al., 2019, p. 89).

As noted in 5.3.10, Ogoori is currently partnering with a research center to conduct a study in relation to toxins in recycled plastic. By doing this, Ogoori creates value for customers by protecting its clients from any harmful chemicals that may cause health issues for the customers and end-users when using its materials. This action can also keep customers' images positive, since being associated with an unsafe material may lead to others viewing them negatively. However, it was also revealed that a lack of knowledge in this area may result in current quality measurements of Ogoori's material not reaching the highest accuracy level. It is considered an obstacle for Ogoori, as mentioned in section 6.1.4.2, and can lead to the firm not creating perfect value related to material safety. For this reason, the firm still needs to improve its safety measures to create more value for its customers. The company can, for instance, collaborate with more scientists and different research institutions to enhance the quality of these measurements. Moreover, advancement in the study of plastic toxicity could potentially increase if the various institutes collaborate and share their findings with one another. Cooperating with multiple institutes can also demonstrate to the client that the business is doing its best to make the plastic material safer, and they may feel better about using its material. In addition, by increasing the number of scientists and researchers it collaborates with, Ogoori can obtain data on safety from a variety of institutions. This can make even more people feel secure in the material.

6.2.1.3 Converting clients' models and offering additional services

The firm also assists companies that want to become more circular in converting their business models, and therefore it creates value by meeting their demands. It was confirmed in section 5.8.2 that Ogoori meets this need, as organizations that come to their business want to change into a circular business model, and need Ogoori's help in doing so. However, this support only creates value to a larger extent once the customers successfully change their current business model into PaaS, and are able to generate earnings from this model.

Ogoori also provides the additional service of performing material replacements when there is a request from the clients, consequently enhancing value by satisfying their demand. Nonetheless, it might be the case that Ogoori charges extra for other services besides supplying its materials. If a customer requires a large number of these services, they may eventually conclude that changing and operating the new business model is too expensive, and the services they obtain are not worth the amount they pay. For this reason, such services can only enhance value creation when the customer feels that these services are worthy and valuable.

6.2.1.4 Value through the ingredient brand

As first mentioned in section 5.3.8, Ogoori creates value through its ingredient brand by improving the perception of customers' brands and making them better known. As a result, customers may become stronger rivals in the market. Nevertheless, an ingredient brand is only effective when Ogoori is well-known and has a high reputation, as fewer people would see items containing the brand favorably if they are unfamiliar with it. In the scenario that Ogoori becomes more recognized and enhances its image, the firm will have a significant impact to change others' opinions about its customers. As such, the intended value creation can only occur after Ogoori becomes better known.

The value of increasing the awareness of clients is only possible for companies that are established to a small extent, as large corporations are often widely recognized. Nevertheless, the ingredient brand may still create value for both smaller and larger corporations in terms of an improved image. It brings benefits to the business customer for several reasons. First of all, brand image is considered to be an important aspect, and such an image can affect the loyalty and trust that customers have in a brand (Alhaddad, 2015, p. 6-7). Secondly, any action taken by a company can have an impact on its image, either in a positive or negative way. Further, regardless of how large a company is, firms can not guarantee that they will always have a good image. For these reasons, it is important for enterprises to make a constant effort to increase their image. In order to do so, the companies can utilize the impact of Ogoori's ingredient brand.

6.2.1.5 Generate value through changing consumer behavior

Ogoori's model also provides value for its clients due to the firm working in accordance with the aspects of people and purpose. Both aspects can make others, particularly current and potential end-users, more conscious of their plastic usage, as noted in section 5.3.5. This can make them be more accepting of recycled plastic and want to use less virgin plastic. As such, they may get a greater incentive to use the plastic products of Ogoori's clients. This is beneficial for the direct customers of Ogoori, as they may experience an increase in the amount of new consumers. However, it can take a while for end-users to change their perspective about their plastic consumption. Because of this, the value for the direct customers may not be achieved at the moment, but can be gained in the future. However, there is no guarantee that the end-users will become long-term clients even though the firm can change their perspective to use recycled plastic. As a result, the direct customer may not become a customer in the long run, indicating that this value is merely temporary.

6.2.2 Possible other value creation

There are other potential ways we believe Ogoori can create and increase the value it provides to customers. These actions are derived from our SWOT analysis.

6.2.2.1. Fourth service package

One way is to provide a fourth service package in terms of altering clients' business models. The firm has only announced three packages so far, all of which require clients to have some expertise in either circular business models or plastics, or a combination of both. This overlooks the demands of another client group. Specifically, enterprises without any knowledge concerning the two aspects, as noted in section 6.1.2.3. Therefore, developing this additional package can expand Ogoori's customer base, and allow the firm to assist even more companies to adapt their business model to PaaS. Thereby creating value for a larger number of organizations that wish to become circular and use Ogoori's material.

6.2.2.2 Establishing a distinct material

As previously mentioned in section 6.1.4.1, Ogoori may compete with rivals having similar offerings in the future. In this case, Ogoori should consider making its material more outstanding than other competitors. Each kind of plastic has different properties, which can be utilized to produce different types of products (AAA Polymer, as cited in Alabi et al., 2019, p.

2-3). As such, the plastic material Ogoori employs has particular properties. For instance, one of the plastics that Ogoori uses is polypropylene, as noted in section 5.3.10. When entirely new, this type of plastic is hard and translucent, softens at 140°C, resistant to solvents, and versatile (AAA Polymer, as cited in Alabi et al., 2019, p. 3). Moreover, particular additives are used to improve the quality of recycled materials, which can make the resource comparable to virgin plastic (Pfaender, 2015, p. 41). As such, it is implied that recycled plastic is not of the same quality as virgin plastic without additives. Additives in plastic can improve quality, as it can make plastic be for instance more durable and flexible (Cano et al., 2022; Bhunia et al., 2013, as cited in Hahladakis et al., 2018, p. 186). As such, Ogoori can utilize additives in its materials to make them have better quality and acquire properties that virgin plastic may not even have. As such, Ogoori can make its plastics more distinct, and become capable of producing an even wider variety of products than the current materials can. Thereby, creating value for a larger consumer base. It also creates more value for the current customers that use Ogoori's material to produce one certain product, as they can use this material having new properties to produce other plastic items. Additionally, this can be a competitive advantage for Ogoori, and it makes the firm more formidable than its rivals in the market. However, Ogoori always needs to incorporate measures to ensure the additives do not harm clients or consumers, as there are certain additives that are harmful, as previously stated in section 5.3.10. To do so, the firm can utilize its partnership with research institutions that study the toxicity of plastics.

6.2.3 Ogoori's current and intended ways of delivering value

Unlike value creation, value delivery involves conveying and distributing information to clients about the company and its offerings, as well as proving that the firm's products or services will benefit customers and meet their needs. This was first noted in section 3.2. Among the nine building blocks of BMC, the channel block refers to how a company reaches out to clients and delivers its VP to them. Due to this, this block is considered to be equivalent to value delivery. As such, section 5.4 demonstrates that Ogoori completes value delivery in several ways.

6.2.3.1 Mutual advertising between Ogoori and partners in the media

To inform and raise awareness of its business, Ogoori has presented its service at conferences and in the media. It is an effective way, especially in terms of social media, since social media has the strong power to spread information to a broader environment (Özkent, 2022). As such, continuing to spread up-to-date news on its business can lead to several potential clients being informed of the firm's development. To expand Ogoori's reach, direct customers of the firm

promote the organization on its channels, such as on their social media. By doing this, Ogoori has the ability to spread its awareness on a larger scale due to its partners' advertisements. This method works in a similar way to word of mouth, which is a marketing strategy in which one customer tells the others positively about one specific product or service after using it (Viki et al., 2017, p. 332). In addition, the clients may be more well-known in the market than Ogoori and are capable of reaching out to a larger group of people. As such, it could be more effective to let these clients promote Ogoori on their CH. Besides, it can illustrate that the customers are satisfied with Ogoori's offerings, as well as the great partnership between the firm and its clients. It raises trust in Ogoori and thus enhances the brand image of the firm.

6.2.3.2 Clients' plastic products on Ogoori's channels

Ogoori also displays the customer's plastic products on its website and on social media. It can be interpreted as proof that its business model is genuinely working, as noted in 5.4.1. As such, Ogoori also demonstrates to potential customers that using Ogoori's material and offering plastic products to end-users through a service model is possible. For this reason, the firm also shows that it can meet the demands of companies that want to employ marine plastic in their products. Moreover, it demonstrates that there are enterprises willing to use its material, and Ogoori is able to convert the customer's business models successfully. For these reasons, it can increase trust in the solution, and thus, Ogoori can capture the interest of more businesses. Because of this, we consider that displaying the plastic products in its CH is a good action and that Ogoori should continue to do so when the product scope and client base expand.

6.2.3.3 Sales team

As mentioned in section 5.4.3, Ogoori has not developed a sales team. However, the organization has a plan to carry out this task. A sales team will conduct the task of communicating and explaining the services that Ogoori currently has, and at the same time understand exactly customers' needs, thereby establishing the most suitable service options. They will also be the ones to describe how to transform the business model to the clients. This increases the level of value delivery to customers, and helps Ogoori provide its services more effectively.

6.2.4 Possible other ways to deliver value

Ogoori may also complete other value delivery activities, as we discovered through our SWOT analysis of the firm.

6.2.4.1 Concentrating on commerciality during presentations

A potential new way for Ogoori to complete value delivery is by focusing on the commercial aspect of transforming clients' business models, since not doing so was discussed to be a weakness in 6.1.2.2. We also assume that every business has an interest in commerciality due to it being a crucial aspect for the survival of any business. Therefore, Ogoori should demonstrate that the new model is economically viable when introducing itself at events where potential clients participate. We believe there are particular elements the firm can emphasize to illustrate this aspect. First of all, the firm can clarify its intention to make the plastic product last as long as possible, so that customers can utilize it to deliver offerings to end-users for decades. As mentioned in section 5.1, clients of Ogoori can offer the same products to different consumers. This is also an aspect Ogoori can emphasize, as this opportunity may lead to customers experiencing less cost in terms of production, since they will not always be required to re-produce the product. By doing so, the clients may experience lower costs in comparison to revenue over time. The next aspect is to show interest in the current plastic products. One of Ogoori's clients has already established the product in the market, and has existing end-users, which was mentioned in the third paragraph of section 5.4.1. Because of this, Ogoori can show that there is an interest in the current product. Doing so shows companies that the product has been well received in the market, and that current clients are gaining revenue. As such, it illustrates that this is a viable solution, which may convince more customers to join its value chain.

6.2.4.2 Reach out to potential clients

Another new way for Ogoori to deliver value is to reach out to customers sooner than intended. As previously noted in 6.1.2.4, waiting for clients to reach out is regarded as a weakness. Although the firm has stated it will approach dream clients in the future and does not have the capacity to take on more cases at the moment, there is still a benefit to begin reaching out soon. Moreover, contacting other enterprises that Ogoori believes to meet its criteria is also assumed to be beneficial for the firms. The reason is that it makes Ogoori become more known among potential clients. Even if Ogoori starts the initial contact and introduces itself and its operation, the firm does not need to supply its services right away. Ogoori can also inform customers of its low capacity, but allow clients to initiate a partnership when the organization develops and acquires more resources. If the customers become interested, it is assumed that they will be open to wait until Ogoori has reached the required capacity. As such, when Ogoori does get

more capacity, it will be more known among several companies due to its outreach. In addition, it can acquire more customers as they have established a presence among them. One way the company can actively reach out to potential clients is by arranging a meeting with each organization. In the meeting, Ogoori can explain its business model, as well as the model customers are going to adopt. By doing this, Ogoori has a higher chance to convince clients to join the value chain successfully, as the business has an opportunity to answer questions from potential customers. As such, companies may obtain a larger understanding of the firm.

6.3 Discussion of sub-question 2

The following paragraphs will answer the second sub-question:

How can value capture be achieved with Material as a Service?

Value capture entails making a profit from value creation and delivery, and as mentioned, Ogoori can create value in a variety of ways through its current offerings. As discussed in section 6.2.1, Ogoori generates value by fulfilling clients' demands regarding access to marine plastic material, offering material replacements, and aiding customers in becoming circular. Referring back to section 6.1.1.2, satisfying customers' requirements is vital for earning revenue, because it encourages clients to continue purchasing the firm's services, and in order to sustain client satisfaction, Ogoori must improve its offerings over time. In order to do so, the firm may use the feedback it receives from clients. How Ogoori intends to obtain feedback was mentioned in section 5.4.1. Utilizing feedback is a great way to improve a service, because it reflects customers' opinions and therefore raises the likelihood that the service provides the client with what they want. Additionally, allowing customers to give feedback shows that Ogoori values and respects their opinions. Being appreciated can make the customer obtain a good impression of Ogoori and make them want to collaborate with the firm longer. For these reasons, if Ogoori encourages each client to provide feedback, the organization has the possibility to build a broad base of loyal customers who will continue the partnership in the long run. In this scenario, Ogoori can earn recurring income from a single client for years, as well as earn income from multiple enterprises. As a result, the organization has a possibility to capture value by satisfying customer demand, and thereby acquiring profits when revenue exceeds its expenses. Profit and revenue are proportional to the amount of customers. In other words, as the number of customers increases, so does the firm's revenue. This leads to Ogoori gaining more profits. In short, an increase in profits is more likely to take place when Ogoori earns revenue from a large quantity of clients.

Another way Ogoori adds value is by making its materials safer. Coming back to section 6.2.1.2, this activity through providing material data sheets and acquiring removal procedures for contaminants can decrease the risk for customers using material carrying harmful toxins. It also maintains the customer's positive image, as mentioned in this section. It can lead to both Ogoori and its customers acquiring additional customers. However, further research is still needed to accurately evaluate the toxicity of recycled plastic. As such, Ogoori could, as mentioned in the same section, partner up with additional scientists and research institutes, and let different institutes share and reflect on their findings with each other. This might result in increased certainty that the resource Ogoori offers is safe, as well as the discovery of other strategies to completely remove toxins. For these reasons, continuing the efforts to guarantee material safety can lead to the acquisition of a higher number of new end-users and direct customers. Further, the growing interest in plastic items among end-users can result in the direct customers earning greater income and being better positioned to remain in the market. As a result, the direct customers may want to become long-term customers of Ogoori. For this reason, Ogoori can capture value by generating a large amount of revenue from a single client, as well as from many different organizations. In this scenario, Ogoori's can generate profitability as earnings eventually can surpass its costs.

Ogoori creates value by enhancing clients' brand reputations through its ingredient brand, and allowing them to verify via data sets and plastic stories that they are making beneficial contributions to the environment. The ingredient brand also demonstrates clients' positive impact on the marine environment, because Ogoori's brand guarantees the origin of the plastic and ensures clean plastic products, as stated in section 5.3.8. As such, the improved image inspires confidence that the products are created from marine plastic and protect marine ecosystems. Such an image might attract a large number of end-users, due to the growing desire and expectation that businesses must contribute positively to the environment, which was emphasized in 6.2.1.1. By employing the plastic items, end-users can also meet this expectation, as the QR-codes placed on the products demonstrate that they use a sustainable product which prevents plastic from reentering nature. Moreover, the good reputation of clients' brands can result in end-users forming a favorable opinion of them, thereby contributing to increasing the likelihood that the direct customers acquire more end-users. When the consumer base of direct clients increases, they might continue purchasing Ogoori's materials in order to keep delivering its products to the end-users. As a result, Ogoori is able to capture value by receiving recurring revenue.

The company also adds value through the ingredient brand by increasing market recognition for its clients. This can help customers attract more end-users, because customers generally prefer products from a brand they recognize over products from unfamiliar brands, and high recognition has a higher degree of acceptability (Alamgir et al., 2010). Thus, Ogoori's direct customers might have a better chance of being chosen by the end-users once their awareness is widely spread, thereby generating revenue from more consumers.

Ogoori is attempting to influence consumers' behaviors regarding the usage of virgin plastic in order to increase their acceptance of recycled plastic. Through this action, end-users can become more interested in plastic products. Thus, Ogoori creates value for its customers by increasing their chances of obtaining a greater amount of end-users. As discussed in the preceding paragraphs, the acquisition of end-users can lead to value capture for Ogoori as it generates income for the direct customer, who thus gets a larger incentive to continue the use of its materials.

The previous paragraphs indicate that Ogoori is on a right track to achieving value capture from its value creation. However, as discussed in section 6.2.1, the different value creation elements may not be fully realized until certain requirements are met, with the exception of the value created by the offering of plastic material. As such, Ogoori should take these into consideration when further developing its business. Referring to our previous discussion in section 6.2.2, there are also actions the firm can implement to improve its value creation. For instance, the corporation can diversify its service packages in order to reach out to more CS. Having more service packages means that the firm is able to satisfy demands from another customer group, which can result in it acquiring more clients outside of its current client categories.

Another way to improve value creation is by making its material more distinct by incorporating additives, thereby enabling each client to produce more than one plastic product and allowing for even more enterprises to incorporate the material. If Ogoori's materials can be utilized to make a wider range of items, the amount of direct customers may increase. Thus, both actions have the potential to increase Ogoori's customer base. As discussed in the paragraphs above, this can result in value capture for Ogoori if the direct customers have consumers willing to pay for the products.

In terms of value delivery, the identified aspects of both Ogoori and its partners promoting the firm allow Ogoori to be more recognized in the market, as discussed in section 6.2.3.1. The increased awareness of the firm may lead to even more clients reaching out to Ogoori. As such,

Ogoori can capture value through the income the new customers provide. As noted in section 6.2.3, the value delivery actions of clients promoting Ogoori, and the portrayal of clients' products on its website, increase trust in the firm. The display of clients' plastic products illustrates that companies have been willing to bet on Ogoori. This can make others view becoming a customer as less risky and thereby be more receptive to being a direct client. Moreover, when customers promote Ogoori, trust is established and making becoming a customer appear less risky. The reason is that the current customers express their satisfaction with both Ogoori and their collaboration. This may cause organizations to view the firm as a dependable provider of high-quality services, resulting in a desire to try its material. If Ogoori can meet their expectations after they become customers, it could lead to the acquisition of long-term clients, allowing Ogoori to capture value.

In the future, Ogoori will also deliver value by establishing a sales team that will help the company fully inform customers of its services. A sales team is the key actor in convincing companies to try Ogoori's service. The more professional the team, the easier businesses will be persuaded to use Ogoori's offerings. Because such a team is confident in the service, and as noted in section 5.7.2, employees must be confident in the company's services while meeting with clients, otherwise they will refuse to enter a cooperative relationship. A confident team is typically able to convey details in a clear and unique way, thereby creating curiosity in the firm. Once Ogoori catches a company's interest, the firm may want to become a customer. Again, this can lead to Ogoori gaining more clients and capturing value through increased income.

Referring back to section 6.2.4, there are value delivery actions that Ogoori can do to raise its market recognition and gain more clients. One of these is to inform potential clients that changing their business model is economically viable. As a consequence, organizations may perceive the solution as less risky and become more interested in trying it. Another action is to actively begin to approach new clients, instead of waiting for them to reach out. By doing so, Ogoori can pique the interests of businesses, because they may not have been aware of Ogoori's services before the firm contacted them. In addition, by conducting a meeting with the potential client, Ogoori can clarify how it can create value for them. Consequently, the firms may develop an interest in trying Ogoori's offerings and want to approach the firm when it acquires the capacity to serve them.

6.4 Discussion of research question

The aim of our master's thesis was to answer the research question:

How can companies that offer Material as a Service be profitable?

Returning to our introduction in section 1.3, generating profitability for a novel circular business model is challenging. However, through the discussion of the thesis sub-questions, we have explored how Ogoori may profit from its value creation and delivery. Based on the case of Ogoori, the figure below explains how this can be achieved. With the aim to answer the research question, the figure illustrates our discussion in a more general way.

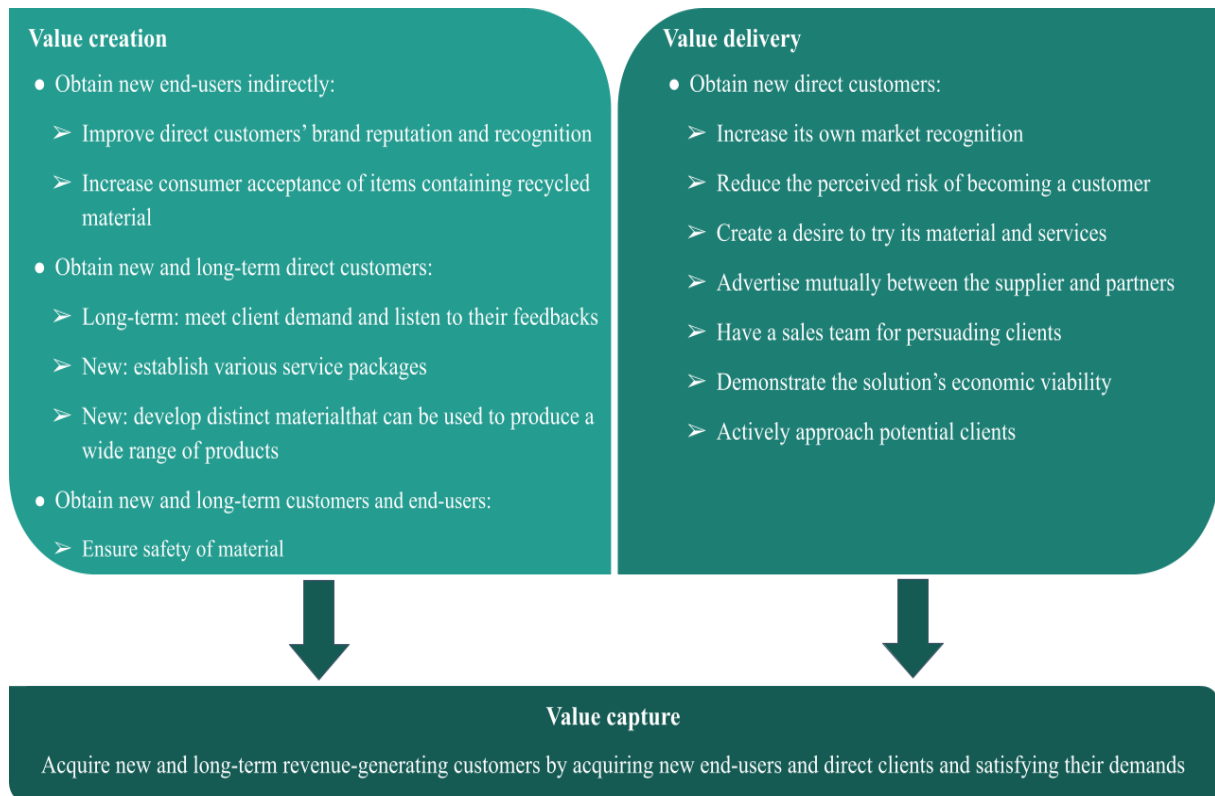


Figure 5: *Capturing value from value creation and delivery based on the case of Ogoori*

The figure above indicates that in order to make a profit, businesses must obtain new and long-term customers. This can be achieved by completing actions that result in the acquisition of both direct clients and end-users and meeting their requirements. However, as the figure indicates, companies' desire to become customers is reliant on a number of factors. As such, it may sometimes be out of the business's control. Because of this, our suggestions are not a guideline for earning profitability with MaaS, but are ideas companies can evaluate when they begin working with the model and what they can do further as the company develops.

The activities that figure 5 depicts, may be taken by other suppliers that wish to operate with the MaaS business model in different contexts. Although the process of conducting these mentioned actions is not explained in a specific manner, other firms can use Ogoori's business

as a typical case to modify their operation. Particularly, the activity of making sure the material is safe is important for all businesses operating with MaaS to avoid harming its direct or indirect clients. However, this action is more vital for companies providing waste materials, since they may contain toxins or other harmful substances after being thrown into the environment.

We also consider the aspect of increasing the acceptance of products that contain recycled material to be critical for other businesses using MaaS. If consumers accept the usage of items incorporating recycled materials, they may want to minimize their consumption of virgin resources. This can lead to a demand for more recycled items, and in this scenario, end-users may prefer companies offering these products in comparison to businesses using virgin ingredients. As a result, companies that manufacture products from virgin materials may need to change to recycled ingredients to meet end-users' needs. As a consequence, these companies may want to become the customers of suppliers operating with the MaaS model. This can open up more opportunities to earn profit for suppliers offering materials through this business model.

As our master's thesis indicates through the theory and findings sections, the activities of creating, delivering, and capturing value are not the only actions that are important to discuss when evaluating how a company can be profitable. As such, looking at all nine building blocks from BMC is beneficial, and through the sub-questions, we have mainly discussed two of them: VP and CH. It was decided to not further discuss the other aspects in the sub-questions, as Ogoori is already quite established in the other building blocks. We also believed looking at those two aspects was most important, for the reason that firms need to offer services that create value which clients are willing to pay for in order to generate revenue, as mentioned in section 3.2.5. It is also essential to make those services known to potential clients, so they are able to purchase them. However, our findings in the other BMC blocks may still be used to demonstrate how other organizations that wish to operate with the MaaS model might acquire a functioning business model, as it explains what they can do within every BMC component. As such, companies may acquire a good starting point to achieve profitability over time. The figure below highlights these aspects, by showcasing existing research and supplementing it with new elements gathered from our findings that we believe are most applicable to other contexts. Due to this, the figure does not illustrate all aspects that were found from performing the case study.

<p>Key Partnerships Theory of material-service systems:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Collectors <input type="checkbox"/> Recoverers <input type="checkbox"/> Recyclers <input type="checkbox"/> Producers <input type="checkbox"/> Retailers <input type="checkbox"/> Consumers <p>General findings from the business case:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Technology companies <input type="checkbox"/> Researchers and scientists <input type="checkbox"/> Funding partners 	<p>Key Activities Theory of material-service systems:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Material repairs, maintenance, replacements, and upgrades <input type="checkbox"/> Monitor materials with material passport <p>General findings from the business case:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Produce product prototypes <input type="checkbox"/> Find a solution for clients problems <input type="checkbox"/> Guide clients in altering their current business model <input type="checkbox"/> Connect network partners <input type="checkbox"/> Ensure the availability of materials 	<p>Value Propositions Theory of material-service systems:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Provide access to material <input type="checkbox"/> Additional services <input type="checkbox"/> Social pressure is managed by the supplier <p>General findings from the business case:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Datasets on environmental impact <input type="checkbox"/> Story of the material <input type="checkbox"/> Quadruple bottom line (planet, people, profit, purpose) <input type="checkbox"/> Ingredient brand <input type="checkbox"/> Trust among customers <input type="checkbox"/> Customize service packages <input type="checkbox"/> Consulting services 	<p>Customer Relationships Theory of material-service systems:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Long-term relationship with clients <p>General findings from the business case:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Dedicated personal assistance <input type="checkbox"/> Co-create products with customers 	<p>Customer Segments Theory of material-service systems:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Producers desiring access to materials <p>General findings from the business case:</p> <ul style="list-style-type: none"> <input type="checkbox"/> B2B <input type="checkbox"/> Businesses with brands <input type="checkbox"/> Sustainability centric companies <input type="checkbox"/> Firms that have physical products <input type="checkbox"/> Enterprises that outsource production <input type="checkbox"/> Organizations willing to convert into Product as A service
<p>Channels General findings from the business case:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Reach out actively to customers by: raising awareness in media and at conferences, frequent interactions with customer, offering post-purchase services <input type="checkbox"/> Own channels: <ul style="list-style-type: none"> <input type="checkbox"/> Establish website to update news about the business <input type="checkbox"/> Create social media platforms to enable two-way communication <input type="checkbox"/> Partners' channels: promote the firm on their social media <input type="checkbox"/> Sales team 				<p>Revenue Streams Theory of material-service systems:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pay-per-use <p>General findings from the business case:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Subscription model, charging customers annually <input type="checkbox"/> Private and public funding
<p>Cost Structure General findings from the business case:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Value driven business model <input type="checkbox"/> Fixed and variable costs: staff, property, machinery, supplies <input type="checkbox"/> High cost of operating with the service model (expenditures with recycling, distribution, production, recovery of materials) <input type="checkbox"/> Technology, research and development, channels, pilot tests, and design costs 				<p>Revenue Streams Theory of material-service systems:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pay-per-use <p>General findings from the business case:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Subscription model, charging customers annually <input type="checkbox"/> Private and public funding

Figure 6: *BMC of MaaS from existing articles and findings from the case company*

To be the most effective, the various elements depicted in the figure above should be tailored to each business that employs the MaaS business model. However, to generate profitability, certain factors may be more essential to incorporate into the business than others. We believe that one of these is the development of an ingredient brand. Referring back to the discussions of the concept in 6.1.17 and 6.3, it appears that such a brand is crucial for putting MaaS suppliers in a better position to earn a profit, as it delivers vital value to both the client and material provider. For instance, in terms of being more attractive in the market, ingredient brands also place an emphasis on a particular material, as noted in section 5.3.8. Doing this is essential for MaaS, as the primary offering of the suppliers is the material. For these reasons, developing an ingredient brand could be beneficial for all MaaS companies to obtain an interest among potential clients and end-users.

Partnering with researchers and scientists could also be relevant for a larger amount of firms. In Ogoori's case, they are responsible for researching and developing removal procedures for toxins contained in recycled plastic. Although this is a critical procedure for Ogoori because the company operates with waste materials, the degree to which this process is important for other firms will vary depending on the materials they use. However, regardless of the material type the organizations use to run their business, material quality still should be considered to be a priority in order to protect the consumers' health. As such, it could be relevant for most firms to cooperate with researchers to ensure their materials are safe.

There are certain elements in figure 6 that may only be relevant to certain companies. For instance, the importance of data sets and the story of the material will be based on the material of the companies, as well as the main value proposition of the firm. In the case of Ogoori, they are especially essential since the firm conducts its business concentrating on sustainability and cleaning up nature, and the company uses this information as evidence to show its performance of protecting the environment. As a result, the elements may be useful for businesses working with waste materials and whose primary goal is to prevent waste from entering the environment. Moreover, targeting businesses with brands is especially relevant for startups that operate with the MaaS model, since they can spread their brand recognition more effectively through more well-known companies.

Referring back to section 4.8.2, we stated we would discuss our thesis generalizability in this section. The previous paragraphs starting from beneath figure 5 and onwards, demonstrate that

our results can be applied to other contexts in terms of MaaS. However, it is impossible to apply our results entirely to another circumstance, as some of the elements may only be applied if certain conditions are present.

7.0 Conclusion

In this section, we will conclude our master's thesis. We will first briefly summarize our thesis results, and thereafter present the thesis's limitations, as well as our suggestions for future research within the study area. Referring back to section 1.3, this master's thesis is aimed to define how a company offering Material as a Service can be profitable by completing a case study of a marine plastic supplier, Ogoori.

We acquired both primary and secondary data to solve our thesis. To gather primary data, we performed qualitative, individual interviews with four informants. Three of them are Ogoori employees, and one is an Ogoori client. We also completed the observation method once at a circular economy event. Secondary data was collected from Ogoori's business documents, news articles about the firms, websites, books, and academic papers. These data identified the components of Ogoori's business model, which served as the foundation for the discussion in this master's thesis. We also completed a SWOT analysis of the company, which aided our discussion on how Ogoori may develop. This research also gave an overview of the business, which we hope will be useful for the firm when further developing.

7.1 Conclusion of sub-questions

Based on the analysis of sub-question 1, it can be concluded that Ogoori generates numerous values when offering ocean plastic through the MaaS model. Specifically, the firm can enhance direct customers' brand reputations and awareness through its ingredient brand and environmental impact through data sets and story, change consumers' behavior to use more recycled plastic, lower the risk of harmful effects by increasing material safety, and satisfy new demands of direct customers in using plastic in a more circular way. However, we discovered that there are other actions Ogoori can complete to generate more value, such as diversifying service packages and making its materials more different compared to the other future rivals. We also mentioned how Ogoori can deliver value in sub-question 1. In particular, the firm performs a series of activities to inform clients about its business, including mutual advertising between the firm and its partners, and having the intention of developing a sales team to draw the attention of clients. In addition, we found that Ogoori could greatly benefit from discussing

the commercial aspect of transforming clients' business models when presenting its operation, and reaching out to clients to establish a larger presence among a higher number of clients.

By discussing sub-question 2, we identified that the elements of value creation and delivery lead to Ogoori and its direct customers having a chance to gain both new and long-term customers, which allows Ogoori to capture value. Several actions can be completed to ensure the acquisition of new end-users. For instance, Ogoori indirectly helps its clients get more consumers by strengthening their brands' reputations and awareness, and by increasing the acceptance of recycled plastic items among end-users. It was discovered that when direct clients improve their customer base, they earn greater income and are better positioned to remain in the market, and thus might desire to become long-term Ogoori clients. As a consequence, Ogoori captures value when its clients obtain more consumers. In addition, when the customers experience an increase in new end-users, they may also keep repurchasing Ogoori's services to meet their consumers' demand, thereby allowing Ogoori to capture value. Over time, its value capture can result in Ogoori's income exceeding its expenses and thus creating a profit.

Ogoori can gain long-term direct customers by satisfying their needs and utilizing their feedback to further meet their demands. The firm may also acquire new clients when launching a new service package, and making its materials more capable of producing a wider range of product categories, granted that the client has committed end-users. Furthermore, ensuring material safety can lead to the acquisition of both direct clients and end-users.

Ogoori can also gain a higher amount of new clients through its value delivery in numerous ways. These involve increasing its own market recognition, lowering the perceived risk of becoming a client, activating a desire of using its services, and ensuring that reciprocal marketing campaigns for plastic products are implemented between the firm and its partners. Besides, it can also obtain more clients through developing a sales team, illustrating that transforming into the circular business model is viable for clients, and directly approaching new clients. If Ogoori manages to meet the new clients' expectations, the clients can become long-term clients. As a consequence, Ogoori captures value through the revenue new customers compensate them, and may earn income that surpasses its expenditures if more clients become long-term customers.

7.2 Conclusion of research question

To conclude our research question, we will first go back to the definition of profitability. As mentioned in the introduction, profitability exists when a business's income exceeds its expenses. In the same section, it was claimed that earning a profit is difficult for new circular business models. As it has been emphasized several times throughout our thesis, MaaS is a novel circular business model, and as stated in section 5.3.6, Ogoori may be the first business to implement it. For this reason, other firms that employ MaaS can use Ogoori's activities for inspiration. To begin operating the business we have in figure 6 summarized both existing research and activities Ogoori does in terms of BMC, which other companies can incorporate if applicable. Together with this figure, other firms that employ MaaS, can conduct activities that have been mentioned in section 7.1 to be placed in a better position for acquiring a profit from its value creation and delivery activities. These actions are also summarized in the fifth figure of this master's thesis. This section found that in order to generate profit, organizations must gain long-term clients through acquiring both new end-users and direct clients and meeting their demands. Our discussion revealed that this may be accomplished by completing the following activities: developing an ingredient brand, guaranteeing the safety of materials, and making consumers be more accepting of products containing recycled material.

The discussion of the research question found that if a company wants to be a customer of MaaS is reliant on several factors some of which may be outside the control of the supplier. However, as our thesis has discussed, the activities of Ogoori has the potential to place the firm in a better position to generate profitability over time. For these reasons, our thesis results are only ideas and not a guideline firms can incorporate when implementing MaaS.

7.3 Limitations

Our master's thesis may not be a strategy for companies that run their business with the MaaS model to earn a profit. In other words, there is no guarantee that our recommendation will lead to profitability. There are some reasons for this. To begin with, MaaS is a novel model that has just recently been studied. Due to this, research articles are limited and there has been no theoretical framework for us to rely on. For this reason, the results of this research are mostly reliant on our own interpretations and discussions. Secondly, our research is conducted on a single case, which causes a limited scope for investigation, while our research questions cover a wider arena. This leads to the generalizability of this thesis not being applicable to every context. Furthermore, based on our knowledge, it is difficult to obtain a profit from new circular business models, making it a challenge for us to find a suitable solution in a short period of

time. Moreover, because this research is only executed in around 5 months, we could not have enough time to test the effectiveness of our suggestions, and thus we could not evaluate whether our recommendations could help Ogoori or other firms to generate profit.

7.4 Suggestions for future research

This master's thesis has not found a conclusive way for companies with the MaaS business model to achieve profitability. However, this thesis has discussed some suggestions that could potentially be solutions to gain profit for such businesses. For this reason, we believe that an evaluation of our recommendations should be further investigated. Besides, our thesis has been researched in the context of marine plastic. As such, more research within the area of MaaS can be investigated with other kinds of material.

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9.0 Appendix

9.1 Appendix 1 - Interview guide for informant 1

Interview guide - Informant 1

Introduction:

- Thank them for their participation
- Inform the interviewee about:
 - The project's purpose: is to evaluate how Ogoori's company can increase profitability which we aim to solve through an assessment of your business model and investigate if there are elements that can be developed
 - How long the interview is going to take: 45 to 60 minutes
 - That they do not have to answer questions if they are not comfortable

Warm-up questions:

- a. What is your job at Ogoori?
- b. What are some of your daily tasks?

Business Model Canvas building blocks:

A. Customer Segments

1. Does your company separate the business customer into different groups?
 - 1.1 If so, what are these groups, and which criteria are used for separating them?
2. Do your customers need to be familiar with producing plastic materials?
 - 2.1 If not, how do they get to know the techniques of producing plastics?

B. Value Propositions

3. What additional services does your company provide to customers besides supplying material, and data on the material's history?
4. If there is any problem related to material that results in delayed delivery to your customer, what are you planning to do?
5. How does your company customize your services to the customer's needs?

C. Channels

6. In your opinion, what are the benefits producers can get from renting materials rather than buying?
7. Does your company contact potential customers or wait for them to reach out?
 - 7.1 If you reach out yourself, how do you make potential customers aware of your business and its offerings?
8. Do you have any measurements to monitor/control the engagement of potential customers?

D. Customer Relationships

9. What kind of relationship do you desire to establish with your customers?
10. What do you do if customers want to stop using the material before the minimum subscription period?
11. How do you manage the risk caused by careless customer behavior?
12. In which ways do you retain your customers?

13. Do you have a plan to conduct the measurement of customer retention rate?
14. Have you thought about establishing an online platform where you can connect with customers and allow them to connect as well?
15. Do you allow customers to submit ideas and contribute to the development of new services or concepts?
16. How will your company allow customers to provide feedback on the material and additional services?

SWOT analysis:

E. Strengths

17. What factors do you think make your company different from your others?

F. Weaknesses

18. What are some aspects of your business you think can be improved?

G. Opportunities

19. What kind of opportunities can your business take advantage of in the future?
20. What opportunities can you acquire from your offerings?

H. Threats

21. What are some challenges and threats you foresee for your business?

End of the interview:

- Let the interviewee reflect and add final thoughts
- Say we will send them the interview notes afterward to confirm that the information is correct and give you the opportunity to remove information you do not want us to disclose
- End the interview and thank them for their participation

9.2 Appendix 2 - Interview guide for informant 2

Interview guide - Informant 2

Introduction:

- Thank them for their participation
- Inform the interviewee about:
 - The project's purpose: is to evaluate how your company can increase profitability which we aim to solve through an assessment of your business model and investigate if there are elements that can be developed
 - How long the interview is going to take: 45 to 60 minutes
 - That they do not have to answer questions if they are not comfortable

Warm-up questions:

- a. What is your job at Ogoori?
- b. What are some of your daily tasks?

Business Model Canvas building blocks:

A. Customer Segments

1. Do your customers need to be familiar with producing plastic materials?
 - 1.1 If not, how do they get to know the techniques of producing plastics?

B. Channels

2. How does your company customize your services to the customer's needs?

C. Value Propositions

3. In your opinion, what are the benefits producers can get from renting materials rather than buying?

D. Revenue Streams

4. Does your company have any competitors?
 - 4.1 If so, do they affect your business revenue, and in which ways?
5. Why do you think a subscription model is better than pay-per-use?

E. Key Resources

6. Do you offer services such as material repairs, replacements, or upgrades?
7. What are your company's main resources?
8. Do you have or will you acquire a patent for your material or brand?
9. Which activities are you planning to do to build up the brand?
10. Are there any guidelines for design that producers must follow?
11. Does your company have a sales team?
 - 11.1 If so, how do they transfer knowledge to the customer?
12. Is your company financially dependent on shareholders?
 - 12.1 If so, how long are they willing to invest in your company?

F. Key Activities

13. Have you ever solved any problems that arose during collaborating with your current customers?

14. In which ways do you ensure that your partners in the value chain still want to continue collaborating with you?

G. Cost Structure

15. What are your business fundamental costs?

SWOT analysis:

H. Strengths

16. What factors do you think make your company different from your others?

I. Weaknesses

17. What kind of opportunities can your business take advantage of in the future?

J. Opportunities

18. What are some aspects of your business you think can be improved?

K. Threats

19. What are some challenges and threats you foresee for your business?

End of the interview:

- Let the interviewee reflect and add final thoughts
- Say we will send them the interview notes afterward to confirm that the information is correct and give you the opportunity to remove information you do not want us to disclose
- End the interview and thank them for their participation

9.3 Appendix 3 - Interview guide informant 3

Interview guide - Informant 3

Introduction:

- Thank them for their participation
- Inform the interviewee about:
 - The project's purpose: is to evaluate how your company can increase profitability which we aim to solve through an assessment of your business model and investigate if there are elements that can be developed
 - How long the interview is going to take: 45 to 60 minutes
 - That they do not have to answer questions if they are not comfortable

Warm-up questions:

- a. What is your job at Ogoori?
- b. What are some of your daily tasks?

Main questions:

1. Can you describe in detail what consequences throwing plastic has on nature?
2. What kind of impact does Ogoori want to have on the environment?
3. Can you explain in detail Ogoori's experience with the Plastic Capture and Storage service?
4. What kind of an agreement do you have with beach cleaners, can you describe this in detail?
5. What sort of barriers do you face in trying to protect nature?
6. What barriers do you face when operating with your business model?
7. We were wondering what the purpose is of showing products made by your plastics on your website?
8. Will you in the future reach out to end-users?
 - 8.1 If so, how do you plan to do this?
9. What do you think are some success factors required to make your business model work?
10. What more can Ogoori do in the future to continue to protect nature?
11. What kind of relationship does Ogoori have with the public sector?
 - 11.1 If they have a relationship, how has the public sector supported Ogoori's business so far?
12. Which opportunities are the public sector likely to provide to Ogoori in the future?
13. What kinds of barriers from the public sector does Ogoori face?

End of the interview:

- Let the interviewee reflect and add final thoughts
- Say we will send them the interview notes afterward to confirm that the information is correct and give you the opportunity to remove information you do not want us to disclose
- End the interview and thank them for their participation

9.4 Appendix 4 - Interview guide informant 4

Interview guide - Informant 4

Introduction:

- Thank them for their participation
- Inform the interviewee about:
 - The project's purpose: is to evaluate how Ogoori's company can increase profitability which we aim to solve through an assessment of your business model and investigate if there are elements that can be developed
 - How long the interview is going to take: 45 to 60 minutes
 - That they do not have to answer questions if they are not comfortable

Warm-up questions:

- a. What is your job?
- b. What are some of your daily tasks?

Main questions:

- 1) Why have you decided to use Ogoori's material?
- 2) In your opinion, how can Ogoori bring value to your business?
- 3) How were you convinced to join Ogoori's value chain?
- 4) What kind of additional services would you like Ogoori to offer?
- 5) Have you adopted the business model product as a service?
 - 5.1 What kind of changes did your company have to implement to adapt to the new business model?
 - 5.2 What kind of challenges did your company face when adopting the new business model?
- 6) How did Ogoori help you transition from your old business model to the new business model?
- 7) How do you convince potential customers to use your new products?
- 8) Have you ever used any service that is similar to Ogoori's service before?
 - 8.1 If so, how do you compare these services?
- 9) Do you think the subscription price for Ogoori's service is suitable?
 - 9.1 If it's not, could you explain why?
- 10) Do you have an agreement with Ogoori for mutual advertising?
 - 10.1 If so, what does this agreement entail?
- 11) What kind of future opportunities do you see in the marine plastic sector?

End of the interview:

- Let the interviewee reflect and add final thoughts
- Say we will send them the interview notes afterward to confirm that the information is correct and give you the opportunity to remove information you do not want us to disclose
- End the interview and thank them for their participation