



# **CUSTOMER NEEDS REGARDING SUSTAINABILITY SERVICES IN PACKAGING MATERIALS INDUSTRY**

Lappeenranta-Lahti University of Technology LUT

Master's programme in Economics

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Jenni Kenttämää

Examiners: Professori TkT Tuomo Uotila

Erikoistutkija KTT Tuija Oikarinen

## ABSTRACT

Lappeenranta–Lahti University of Technology LUT

LUT Business School

Business Administration

Jenni Kenttämaa

### **Customer needs regarding sustainability services in packaging materials industry**

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75 pages, 14 pictures, 1 table and 0 appendix

Examiners: Professor TkT Tuomo Uotila, Senior Resarcher PhD Suvi-Jonna Martikainen

Supervisor: Senior Researcher KTT Tuija Oikarinen

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In today's B2B environment the role of sustainability has grown to be an important part of companies' business strategies. There has also been a realization that only sustainability is not enough but there is a need to focus on regenerative business models. This has shifted the discussions towards increasing the organization's environmental handprint instead of only controlling the environmental footprint.

This master thesis is investigating how a paper board manufacturer can support its customers with their sustainability needs regarding packaging solutions. More specifically, this thesis is focusing on understanding how tailored sustainability services can provide value for customers and support the case company's road towards 100% regenerative products and solutions company. This thesis is qualitative research, and five interviews were conducted by following semi-structured interview method.

Based on the thesis, the interviewed customers see sustainability as a crucial part of their business strategy. Customers have sustainability strategies with ambitious targets, and they expect support from their partners in this area. Sustainability and the related regulation are factors also related to customers' packaging development strategy.

Based on the research, collaboration with the case company's customers is a key to succeed with the sustainability transition. The case company's sustainability service portfolio is one way to support collaborate and support customers in their sustainability strategy. Especially knowledge sharing in different forms and the circularity assessment service were seen as good tools to collaborate with both customer's and case company's sustainability strategy.

TIIVISTELMÄ  
Lappeenrannan–Lahden teknillinen yliopisto LUT  
LUT-kauppakorkeakoulu  
Kauppatieteet

Jenni Kenttämaa

## **Kestävän kehityksen palveluihin linkittyvät asiakastarpeet pakkausteollisuudessa**

Kauppatieteiden pro gradu -tutkielma

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Tarkastajat: Professori TkT Tuomo Uotila, Erikoistutkija PhD Suvi-Jonna Martikainen

Ohjaaja: Erikoistutkija KTT Tuija Oikarinen

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Nykypäivän B2B ympäristössä vastuullisuuden ja kestävä kehityksen rooli on kasvanut merkittäväksi osaksi yritysten strategiaa. Kestävän kehityksen lisäksi keskustelu uusintavasta talousmallista on lisääntynyt sen ymmärryksen kautta, ettei ole riittävää keskittyä vain pienentämään bisneksen ympäristöjalanjälkeä vaan kasvattamaan positiivista kädenjälkeä.

Tämä pro gradutyö tutkii kestävä kehityksen roolia pakkausteollisuudessa. Työssä keskitytään erityisesti tarkastelemaan case -yhtiön lanseeraamaa kestävä kehityksen tuoteportfolion roolia asiakkaiden sekä case -yhtiön kestävä kehityksen strategian tukemisessa. Tutkimus on luonteeltaan kvalitatiivinen ja sen aikana toteutettiin viisi puolistrukturoitua haastattelua.

Tutkimuksen perusteella case -yhtiön asiakkaat näkevät kestävä kehityksen tärkeänä osana heidän toimintaansa. Asiakkaat ovat luoneet kestävä kehityksen strategiat sekä määrittäneet tavoitteet, joihin asiakkaat odottavat tukea yhteistyökumppaneiltaan. Kestävä kehitys ja siihen liittyvä regulaatio ohjaa merkittävässä määrin asiakkaiden pakkauskehitysstrategiaa.

Pro gradu -työn perusteella tiivis yhteistyö liittyy pakkauskehitykseen ja kestävään kehitykseen on avainasemassa sekä asiakkaiden että case -yhtiön kestävyysstrategian toteutamisessa. Tutkimuksen perusteella case -yhtiön lanseeraama kestävä kehityksen palveluportfolio on yksi tapa tukea asiakkaita kestävä kehityksen osalta. Erityisesti tiedon jakaminen koulutuspalveluiden muodossa ja kokonaisvaltainen tuotteen kiertokulun arviointi eri näkökulmista (Circularity assessment) liittyy pakkauskehitysyhteistyöhön todettiin tukevan kestävä kehityksen työtä sekä asiakkaiden että case-yhtiön osalta.

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## ABBREVIATIONS

B2B	Business to business
CEPI	Confederation of European Paper Industries
EPR	Extended Producer Responsibility
EUDR	European Union Deforestation Regulation
FMCG	Fast Moving Consumer Goods
GHG	Green House Gas
HVM	Hierarchical Value Map
LCA	Life Cycle Assessment
NGO	Non-Government Organization
PPWR	Packaging and Packaging Waste Regulation
SUPD	Single-Use Plastics Directive
TBL	Three Bottom Line

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## **1. INTRODUCTION**

This master thesis is investigating how a paper board manufacturer can support its customers with their sustainability needs regarding packaging solutions. More specifically, this thesis is focusing on understanding how tailored sustainability services can provide value for customers and support the case company's road towards 100% regenerative products and solutions company. To understand the solutions that customer needs, it is important to seek understanding of the consequences resulting to the customers from the provided solutions. Gutman (1982) is describing the perceived customer value of an offering as the combination of benefits that the customer is expecting and experiencing and the undesired consequences that comes in the same package.

Semi-structural qualitative method is used in the empirical part of the thesis to conduct interviews and analyze the results. Features from specific semi-structured method, soft ladder- ing method by Reynoldson and Gutman (1988), was used in the interviews to seek deeper understanding of customer values and needs related to sustainability transition. By understanding the customer needs and values, the thesis is focusing on understanding further how the case company could support these needs with their dedicated sustainability services.

### **1.1 Background and motivation**

Although sustainability management is becoming increasingly known as a concept in major companies, there is still significant discrepancy between the state of the Earth and the impact of the activities taken so far (Dyllick and Muff, 2015). Our industrial economy is still following the same basic characteristic from the start of industrialization era. This characteristic is "take-make-disposal" pattern which is describing our linear model of consumption. Companies take the raw material, manufacture the product and then sell it to the consumer who will use it for the needed purpose and finally throws the product away (MacArthur, 2013).

In recent years, there have been an increasing understanding that only sustaining the Earth system is not enough but also regenerating the planet's ability to meet human needs today and in the future is needed. This has led organizations to adopt regenerative practices and strategies into their business. (Konietzko, Das, et al., 2023) Regenerative business models are closely linked to industries that are dependent on the nature resources. One of these industries is forest industry which we focus on this thesis. Uldrich (2021) states that the rights

of nature may have an impact on the license to do business in the future. This is the case especially in industries with close and degenerative ties to the environment.

There has been an increasing pressure for sustainable business practices. The pressure to provide evidence of sustainable business practices comes from different stakeholders such as regulators, consumers and NGOs. Based on Foerst et al. (2015) research especially fast-moving consumer goods (FMCG) producers are highly sustainability focused regarding the purchased packaging. Sustainable packaging solutions in food and beverage industry are one important way to differentiate from the competition. This results in high ambition to focus on sustainable packaging development and also demands for supplier as well to set sustainability targets and actions. (Foerst et al., 2015)

To ensure that companies provide right solutions to their customers also in the area of sustainability it is crucial that companies have enough value creation know-how. This requires an understanding from supplier how it can support its customers business and how the company can enhance the perceived value. To build up this know-how it is important to understand customer's business and the challenges related to that. (Worm et al., 2017)

## **1.2 Research Objectives and Questions**

This thesis focuses on creating understanding of B2B customers' needs regarding sustainability services in packaging materials industry. More specifically, the thesis is investigating how a tailored sustainability service portfolio of a paper board manufacturing company can support its own and its customers road towards regenerative business. To understand the value that the case company's sustainability service portfolio can provide, this thesis is investigating what is meant by customer value and how it can be created. It is also focusing on the customer decision making process which is connected to the customer's values.

There are two research questions that this thesis aims to reply. The first one is formulated as below:

**RQ1:** *What are the needs of the customers regarding sustainability services in packaging industry?*

Based on the answers to the first question the second question is trying to investigate how the case company's sustainability service portfolio can support customer needs. The second research question is formulated as below:

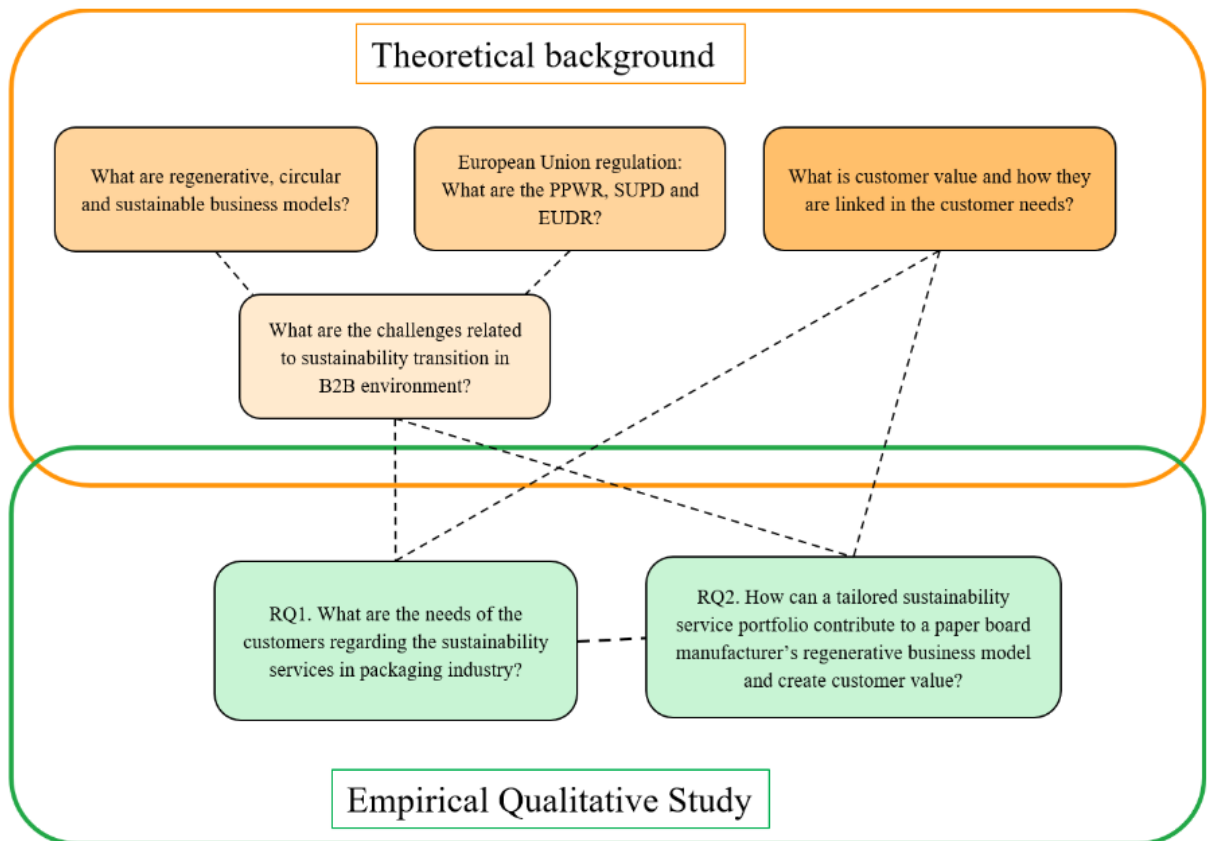
**RQ2:** *How can a tailored sustainability service portfolio contribute to a paper board manufacturer's regenerative business model and create customer value?*

## **2. THEORETICAL BACKGROUND**

This section presents the theoretical background for this thesis, and it is divided into five chapters. The first chapter is focusing on providing an overview of the business models related to sustainability, circularity and regeneration. The intention is to give an overview of different terms that are used in the area of sustainability. As sustainability is still the most commonly used term in B2B environment it was decided that this term is mainly used in the later parts of the thesis.

The second chapter gives a summary of recent and upcoming European Union regulation which affects significantly to packaging industry companies' sustainability approach and hence business models. The third chapter is focusing on the challenges related to sustainability transformation in B2B business environment. The fourth chapter describes what is meant by customer value and decision-making process. Finally, the fifth chapter is concluding the most important theoretical concepts of the earlier chapters.

The above introduced chapters in this theoretical part support the writer in the empirical part where qualitative research method is used to seek answer to two research questions introduced in the previous chapter. Picture 1 shows the theoretical framework and how the different parts of this chapter will be linked to the research questions that writer is seeking to answer during this thesis.



**Picture 1.** Presentation on how the theoretical and empirical part are linked to each other in the thesis.

## 2.1 Regenerative business

Climate change is one of the global megatrends. Sustainability has been an increasingly hot topic in politics and in companies. In recent years, there has been a realization that only sustainability is not enough as the degenerative economy has weakened the planet's regenerative capacity in a way that long term human welfare is at risk. The focus has shifted more towards regenerative thinking which is based on the idea that humans are part of and dependent on the nature. (Konietzko, Das, et al., 2023)

Regenerative business models are still a new concept and there are various definitions for regenerative business. One way to describe regenerative organizations is a co-evolutionary process where organizations activities are aligned with the surrounding living systems. These organizations would build resilience against disturbances and enhance the wellbeing of both humans and nature. Regenerative business models acknowledge that human societies are deeply connected and depended on the health of the biosphere (Konietzko, Das, et al.,

2023). Regenerative business can be described also based on the net positive impact. This means that the organization's handprint is higher than its footprint. Footprint describes the negative impact of organization's business to social-ecological system and the handprint is then describing the positive impact (Sitra, 2023).

Regenerative business models are closely linked to industries that are dependent on the nature resources. One of these industries is forest industry which we focus on this thesis. Ulrich (2021) states that the rights of nature may impact the ability to do business in the future. Especially in industries with close and degenerative ties to the environment.

When discussing about environment and business there are many different terms in use. All of these business models are focusing on the ability to design new systems of production and consumption with respect of the nature. In this chapter differences and overlaps between sustainable, circular, and regenerative business models are explained to avoid misunderstandings.

Sustainable business models focus on socio-technical systems which means primarily product-service systems. The key focus is to mitigate negative impacts toward eco-sociological system that are caused by the business activities. Products are designed to be low impact which have as low footprint as possible. The base for sustainable business model is the view that there are limits of growth in the planet, meaning limit of resources that will cause restrictions for consumption and population growth. (Konietzko, Das, et al., 2023)

Base for sustainable business models is so called triple bottom line (TBL) which focuses on the balance between economics, ecology and ethics. John Elkington introduced the TBL concept first time in 1994 and the argument was that companies should prepare three separate bottom lines. The first bottom line is focusing on traditional measures; profit and loss. The second bottom line focuses on people aspect which means measuring how socially responsible the company is. The third bottom line is then measuring company's environmental responsibility. After TBL concept introduction there has been also more interpretation of the model, such as Krajnc and Glavic (2005) who explains TBL as "the creation of goods and services using processes and systems that are non-polluting, conserving energy and natural resources, economically viable, safe and healthful for employees, communities and consumers, socially and creatively rewarding for all working people".

The focus in circular business model is on closed-loop systems and material productivity. By focusing on both energy and raw material efficiency in industrial systems environmental

impact will be lowered. Circular business model focuses on maximizing value creation with minimal energy and raw material throughput in the system. Model focuses value over volume. (Konietzko, Das, et al., 2023)

Ellen MacArthur Foundaton (2013) describes the circular economy as an “industrial system that is restorative or regenerative by intention and design”. This type of economy would be following three principles. The first one is that the products would be designed in a way that “waste does not exist”. This would mean that the products would be optimized for cycle of reuse and disassembly which would differ clearly from the disposal and recycling systems. Although recycling is offering a possibility to use part of the material again still large amounts of energy and labor are lost in the cycle. (Ellen MacArthur Foundation, 2013)

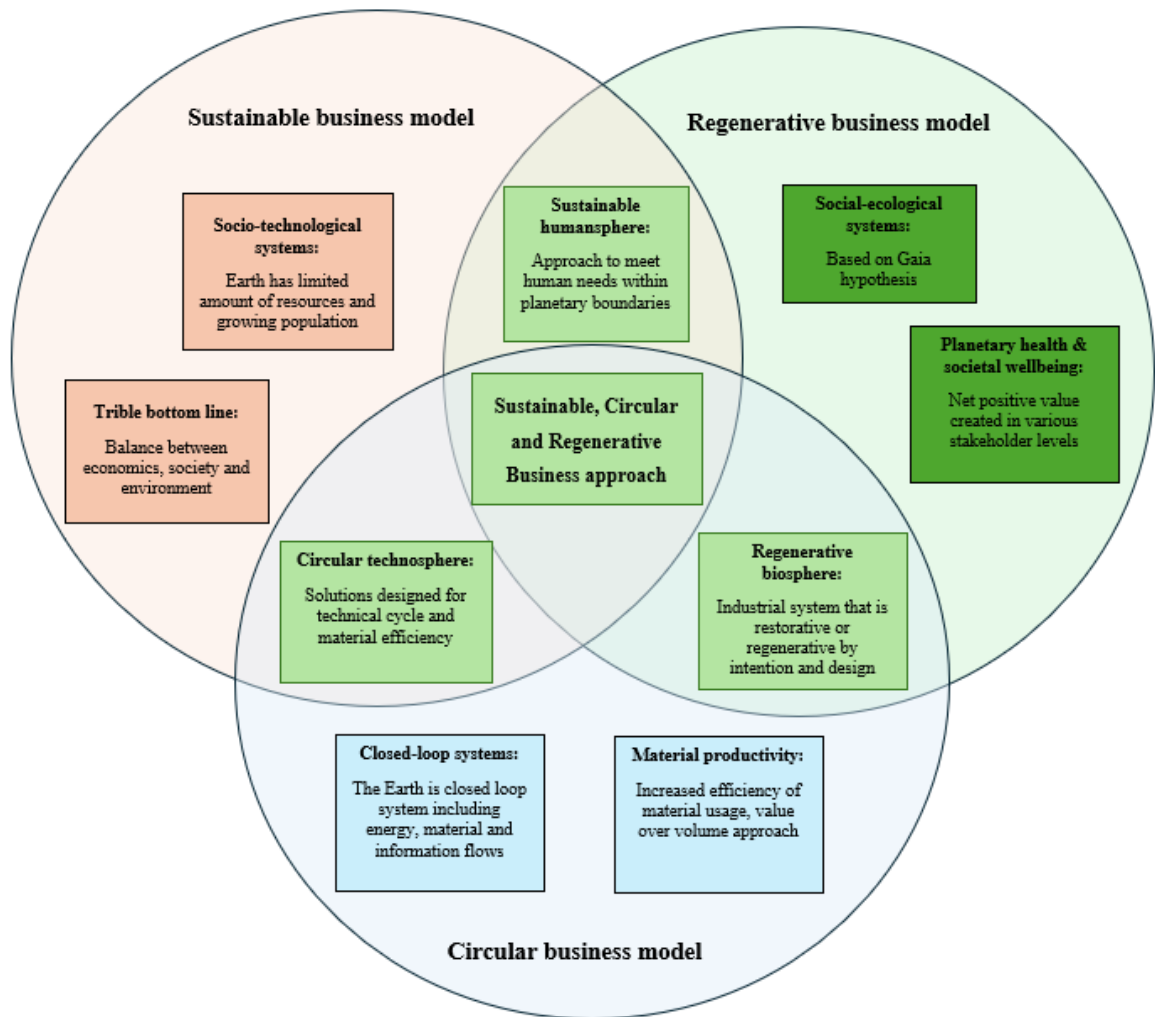
The second principle is the clear differentiation between durable and consumable components. In circular economy, consumables would be made of biological ingredients that are non-toxic and can be returned back to biosphere. Durables are made of technical nutrients that cannot be returned safely back to biosphere which would mean that these components would be designed for reuse from the start. Business model of today is called “buy-and-consume” which means that an individual consumer buys the product for itself and then consume and finally depending on the product it goes to either waste disposal or recycling. In circular economy model, durable products would be leased or rented. This would require different type of business model between businesses and customer. Third principle is about the energy which should be renewable by nature. (Ellen MacArthur Foundation, 2013)

Bocken and Ritala (2020) has been describing different circular business models focusing both on environmental and innovation. Focusing on the environmental aspect, Bocken and Ritala are introducing narrowing, closing and slowing resource loops. Narrowing loop is focused on production efficiency in a way that the product is produced in fewer resources. This loop is normally also saving cost due to less raw material usage and hence it is already now adopted by many companies. Closing loop is about recycling which means that it is focusing on reusing post-consumer material streams. In this loop, it is important to understand the quality of recycled material and the end product where this type of material can be used. Finally, the third loop called slowing loop is focusing on extending the product life. To be able to extend the time of value from the product, it is important to focus on the durability and quality aspects in product design. It is also important to consider maintenance and repair strategies that can help with extending the life of the product. Many times these loops

are in place simultaneously in companies business models as they are complementing each other. (Bocken, Ritala, 2020)

The regenerative business model has a view of social-ecological systems and the focus is on health and wellbeing. Konietzko et al. (2023) state that regenerative business models are based on Gaia hypothesis (Lovelock, 1986) that describes the planet as a single self-regulating organism. One of the key elements of Gaia hypothesis is that Earth's organisms and their environment form a coupled system. This means that physical and chemical environment of biota are affected by it and then shaped accordingly (Schneider and Londer, 1984).

In picture 2 all three business models and the linkages between them are described. The regenerative business practices can be found from both regenerative and circular business models. Konietzko et al. (2023) named this linkage as regenerative biosphere. In the circular economy literature focus is on the design of the biological cycle in which materials retain their renewability and the materials that decompose affects ecosystem regeneration. In literature concerning regenerative business practices, the focus is to go even deeper on the design approaches to be able to improve and heal human-nature relationships.



**Picture 2.** Sustainable, circular and regenerative business models has their own focus areas but they all linked together in some of their approaches. (modified from Konietzko et al., 2023, p. 372-388)

The linkage between circular and sustainable business models is called the circular technosphere. This refers to Ellen MacArthur Foundation (2013) technical cycle in which the manmade materials and durable products are made in respect of the environmental resources. Common focus area for both sustainable and regenerative business approaches is meeting the human needs within the planetary boundaries. In the picture 2 this linkage is referred to as Sustainable humansphere.

Hellström (2023) has described different ways and stages of business approaches concerning the regenerative thinking. Sitra's description includes seven business approaches from de-generative towards generative business approach as in the picture 3.



**Picture 3** Picture is illustrating the steps from degenerative business approach towards regenerative business approach. (modified from Hellström, 2023; Reed, 2007, p. 24)

In exploitative business approach the basic idea is to optimize the economic value of the business. Investment decisions are based on the economic growth and increase of wealth of the inner circle of the company. The negative impacts to environment are seen as unavoidable consequence of the business. They are only avoided if laws or regulation requires that. In many cases this type of business is degenerative which means that it has negative impacts to socio-ecologic system.

The next approach is called risk mitigation business approach which is still mainly focused on optimizing economical value but has already some focus on decreasing the footprint. The negative impacts for environment are minimized in those places where it has no negative impact to the business. Restrictions to negative environment impacts are still quite limited in long term and are mainly done based on laws and regulations. (Hellström, 2023)

In preservative business approach the aim is to preserve the current state of socio-ecological system. It is also called as net-zero impact approach. This is common approach for companies that are aiming to decline their footprint. Companies who do business based on this approach focuses to minimize the footprint of their own actions. For example, aim can be to preserve biodiversity in the area where the company is operating. (Hellström, 2023)

The next step toward more regenerative business is called consistency approach which is aiming at increasing the positive impact to the environment. In this approach interdependency between economy, human society and environment is recognized and it is possible to do profitable business that aligns with these parties. In this approach human, nature and economy are seen as equally important factors. Consistency approach has been one of the guiding principles of sustainable development from 1992 United Nations Conference on Environment and Development in Rio de Janeiro. (Hellström, 2023)

Restoration or reconciliation business approach focuses on enhancing the current state of the socio-ecological system. Aim is to restore area where ecological damages have been caused

by the exploitation of the natural resources. One example of the actions could be using a technology to capture industry's carbon emissions from the air. Problem with this approach is that it focuses mainly on single actions where timespan is also usually relatively short. Also, this approach allows harmful actions which in the end might not lead to an optimal end result as a whole. (Hellström, 2023)

“Doing good” business approach is guided by the idea of ideal world that is enhanced by the economy. The focus changed from adapting or solving problems towards finding possibilities. Companies that follow this approach are sustainable purpose or value driven and strategy of these companies are based on sustainable development. Sustainability is not seen as a tool to create value, but the business is seen as a tool to enhance the sustainability. (Hellström, 2023)

As a last step in the scale is the regeneration business approach. The whole purpose of this approach is to co-operate with socio-ecological systems we live in. It is not about enhancing or protecting the nature in the area of business but doing business in collaboration with environment in a way that both business and socio-ecological system can develop. (Hellström, 2023)

## **2.2 Regulation related to packaging industry**

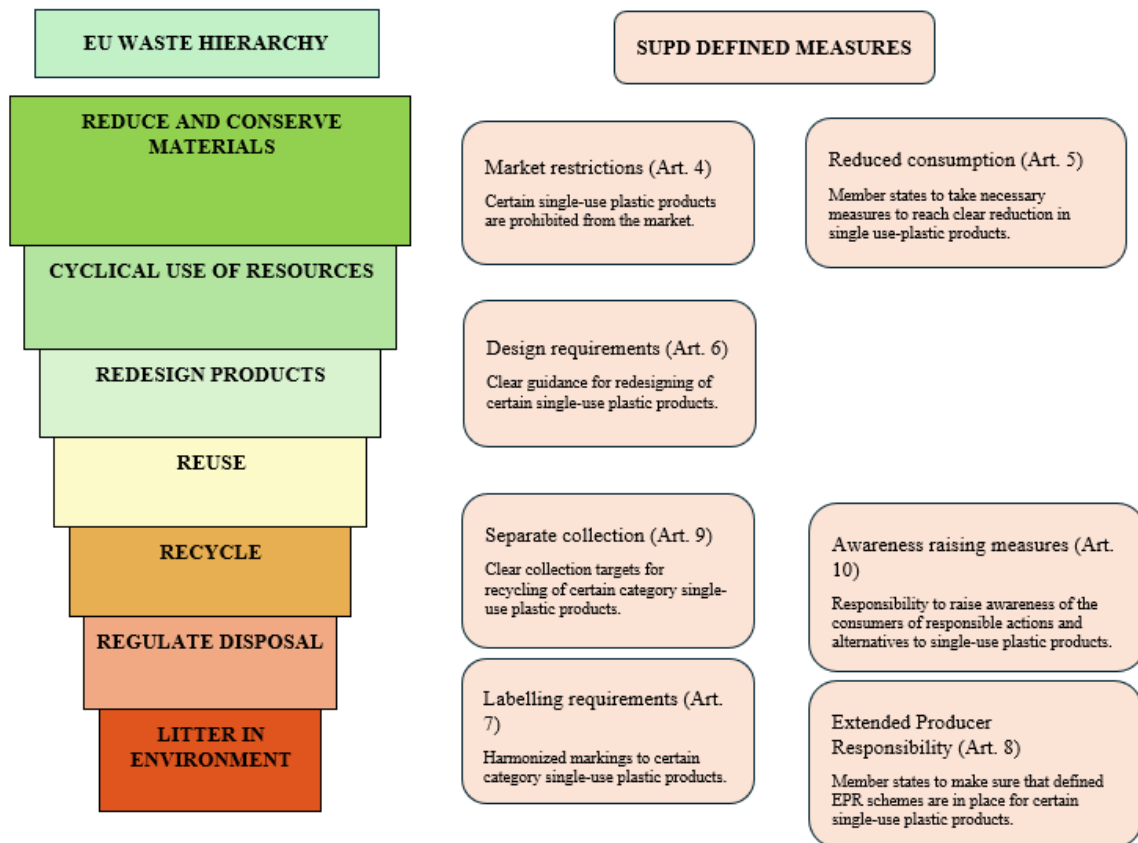
Packaging is the primary user of virgin fibers nowadays. Based on CEPI statistics (2023) 62,4 % of paper and board production is used for packaging. Based on the same statistics the share in 1991 was 40,8 %. Reasons for this increase are the development of retail sale and the increased amount of single use packaging in supply chains (Coelho et al., 2020). Two EU regulations that are particularly followed in the case company are Packaging and Packaging Waste Regulation (PPWR) and Single Use Plastics Directive (SUPD). Both of these are part of EU's new Circular Economy Action Plan which is supporting the transformation required by the European Green Deal.

The original Packaging and Packaging Waste directive (PPWD) has placed 20<sup>th</sup> December 1994. The directive was revised in 2018 and after that in 2022 European Commission proposed a new revision, Packaging and Packaging Waste Regulation (PPWR). Both the original directive and the revised regulation aim to deal with increasing amount of packaging waste and to remove any obstacles in the internal market due to different countries adopting different rules of packaging design. This directive is covering all packaging that is placed on

the European market and packaging waste regardless of the material used. All the EU countries should take action to increase the share of reusable packaging, increase the measures to reach defined recycling targets for different materials and to limit the weight and volume of packaging to minimum level which is required to ensure the product safety. (EUR-Lex, 2020; Internal material, 2021; Internal material, 2023)

2022 revision is focusing on new recycling targets and new methodology for calculating recycling targets. Essential requirements for packaging will be modified and they will be focused on reusability and recyclability, reducing packaging waste and over packaging and encouraging use of recycled content in packaging. By 2023 packaging needs to be designed for material recycling and by 2035 packaging should be able to be collected, sorted and recycled at scale. Also Extended Producer Responsibility (EPR) scheme will be required. EPR schemes are set up to ensure that packaging producer takes the responsibility for the product's waste stage management. EPR fees encourages producers to consider the packaging design to be in line with PPWR requirements. Based on PPWR, EU countries should ensure that EPR schemes are established for all packaging by end of 2024. (EUR-Lex, 2020; Internal material, 2021; Internal material, 2023)

Another directive in EU level concerning packaging is Single Use Plastic Directive (SUPD). The objective of the directive is to both prevent and reduce the impact of plastic products in the environment. Directive also aims to promote the transition towards circular economy. Single use plastic is defined in EU Directive (2019) as follows, “a product that is made wholly or partly from plastic and that is not conceived, designed or placed on the market to accomplish, within its life span, multiple trips or rotations by being returned to a producer for refill or re-used for the same purpose for which it was conceived”. The directive focuses on ten different categories of single use plastics which have been identified to be the most common objects to litter. Depending on the category there are different measures defined in the directive, these can be in the extreme end, product bans or then more modest like new product design requirements. SUPD is especially targeting to decrease the amount of litter at shorelines and riversides. In below picture 4 different measures SUPD are defined depending on the waste hierarchy.



**Picture 4.** SUPD defines measures that needs to be taken depending on the product's waste hierarchy. (modified from Kiessling et al., 2023)

From the case company's perspective, the focus concerning SUPD is following products: cups for beverages, food containers, beverage cartons, packets and wrappers. The interpretation of the products that contain plastic lining or coating on surface of the paper- and board-based products are considered as single use plastic product in the directive. This means that for example coffee cups and paper board take away salad bowls are within the directive scope. It is important to understand also that the member states are setting their own measures to fulfill the SUPD requirements, and these can differ significantly from country to country. (Internal material, 2021; Internal material, 2023)

As the forest is the foundation of the case company's business it is important to introduce shortly also EU's regulation on Deforestation-free products (EUDR). The aim of this regulation is to reduce EU's impact on deforestation and forest degradation which are big drivers of climate change and biodiversity loss (European Commission, 2023). Based on the case company's review wood raw material used is coming from sustainably managed forest so

there would not be changes to the forest management itself. However, EUDR defines increased due diligence reporting requirements that also the case company will implement. (Internal material, 2023)

### **2.3 Challenges related to sustainability transformation**

Both Hecker and Toivonen (2024) and Tandon et al. (2024) have investigated the challenges of B2B companies related to sustainability transformation. The study of Hecker and Toivonen (2024) focuses especially on understanding the obstacles that materials science companies have when implementing regenerative principles at the ideation and scaling stages. Tandon et al. (2024) focus on understanding sustainability transition related challenges in post-pandemic business environment.

Hecker and Toivonen (2024) described the challenges related to transition from proof of concept towards industrial scale. Based on the study, the current approach is to scale up before partnering with larger manufacturing facilities. The risk with this approach is that the investing company is not able to convince partners to adopt new materials and processes in the end. It would be less risky if multiple big players would make the initiative to implement new more sustainable material choice together. This would require that companies would start to promote regeneration and balancing growth more in the current business environment.

Implementation of new packaging materials can be a lengthy process which requires a lot of resources. Process can be slowed down due to different protocols, intellectual property rights and approval processes, especially in multinational B2B companies. Change of packaging materials can require investment in different steps of the value chain and due to a complex and long R&D process, varying from months to several years, it takes also time to realize the benefits of the change (Hecker and Toivonen, 2024). In the study of Tandon et al. (2024) respondents raised up that due to tight financial situation in many firms it is hard to justify sustainability related investments without clear monetary pay back for the spent money.

Hecker and Toivonen (2024) raised up the importance to recognize that when sustainability related material changes are made there can be also differences in the performance of the new material. Especially concerning plastics, customers and end consumers are familiar with plastic packaging and its performance. Hence, it is crucial to recognize that plastics have been widely used material for a long time and packaging processes have been optimized for

plastic material. When introducing renewable materials to replace plastic alternatives, it needs to be recognized that the performance can be different and new definitions are needed for validating the packaging.

Tandon et al. (2024) raised up a challenge related to customer support. Covid pandemic was seen as one influencing factor to support from customer side as the pandemic caused many companies financial difficulties. This in turn affects companies' possibilities to invest in sustainability transition which makes it harder to convince B2B customers to invest in sustainability. Hecker and Toivonen (2024) highlight that it is crucial to educate B2B customers of the environmental impact of the used raw materials. Marketing needs to be done in a way that customers understand the long-term benefits of regenerative products and, also to highlight the possibilities to use these arguments as their own selling arguments of the product.

The sustainability transition requires commitment from the whole supply chain to be successful. In Tandon et al. (2024) study respondents indicated that it is challenging to find partners throughout the whole supply chain in B2B business. Hecker and Toivonen (2024) highlight the importance of constant feedback loops from all stakeholders during the prototyping phase of the material development process. With this feedback, company is able to develop the new material or product to the desired direction of the market. To create this collaborative way of working, it is important to actively change knowledge between the companies.

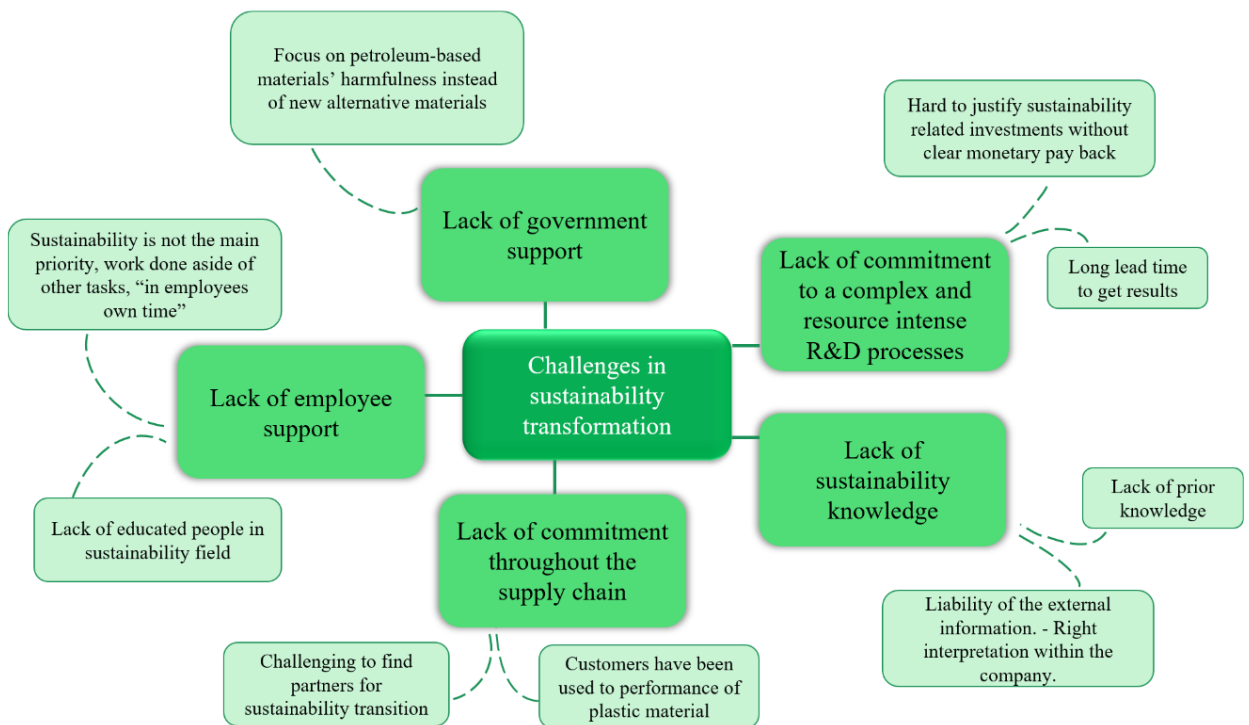
The importance of the adequate knowledge base in B2B companies about sustainability transition was recognized widely in both studies. One difficulty related to knowledge management is the lack of prior knowledge of the topic which would help to gain more complementary knowledge on the topic on top of the already known information. Other recognized difficulty related to knowledge management related to the liability of the information which comes outside the company. Respondents were concerned that the information coming from outside was not interpreted in a right way due to limited prior knowledge base. One angle to this is also that the training services outside the company require some level of investment. (Tandon et al., 2024; Hecker and Toivonen, 2024)

Although, sustainability has been raised up higher in the companies' agenda other objectives are found to be higher in employees' agenda. The main reasons recognized for the lack of employee support were lack of motivation, resistance from older employees and lack of training. Respondents of Tandon et al. (2024) study indicated that they lack educated people

who could promote sustainability transition in the company and educate also the staff inside the company to promote the sustainability forward. Study recognized two areas as a reason for lack of educated people. First, people are not always interested in learning new skills or then educated personnel are not always motivated to teach one's peers. Second, companies are not investing for people who would be working with sustainability transition in the company, which then requires the existing people to work on the sustainability related topics "in their own time" and hence is not their top priority. (Tandon et al., 2024)

Lack of government support was raised as one difficulty concerning stakeholder support. Government's actions, e.g. changes in the law that support sustainability transition, would be needed to push other stakeholders towards more open-minded atmosphere regarding sustainability initiatives (Tandon et al., 2024). Hecker and Toivonen raise up that legislation is currently focusing on addressing the harmfulness of petroleum-based materials instead of promoting new more sustainable alternatives and how to handle them at the end of life.

In the picture 5 below, main challenges related to sustainability transformation discussed in this chapter has been summarized. Challenges were divided under five categories: Lack of government support, Lack of commitment to a complex and resource intense R&D process, Lack of sustainability knowledge, Lack of commitment throughout the value chain and Lack of employee support.



**Picture 5.** Five key challenge areas were recognized based on the studies of Tandon et al. (2024) and Hecker and Toivonen (2024)

Based on the studies discussed in this chapter there are challenges that are clearly identified in relation to sustainability transformation. In the empirical section of this thesis, interviews will be used to investigate this topic and analyze if the challenges are common also in the case company's customer's side.

## 2.4 Decision-making process and values

To be able to discuss more about the customer value that the case company's tailored sustainability service portfolio can provide, it is important to search theoretical background for this area. This chapter is focusing on customer value; what is meant by customer value and how it can be created. It is also focusing on the customer decision making process which is connected to the customer's values.

To ensure that companies provide right solutions to their customers it is crucial that company has enough value creation know-how. Value creation know-how is supplier's ability to understand how it can support customers business to grow and how the company can enhance the perceived value better than competition. To build up this know-how it is important to

understand customer's business and the challenges related to that. It is also important to understand how customers value the competing solutions. (Worm et al., 2017)

Kumar and Reinartz (2016) have described that the purpose of sustainable business is that first firm creates value for customer and then some part of that customer value can later create value to the firm in different forms. Based on this definition customer value is a dual concept. Zeithaml (1988) describes that the value is defined as an overall assessment of the utility of the sold good or service according to perceptions of what is finally received and what is given in return.

Rokeach (1973) states that values are resulting from the culture, society and personality and they guide individual's actions, attitudes and judgements. Rokeach created Rokeach Value Survey to be able to measure values in a more objective manner. In the Rokeach Value Survey values were divided into two main categories, terminal and instrumental values. Terminal values concern preferred end-states of existence, which could be for example happiness or security. Instrumental values are determined to be related to modes of behavior such as broad-minded or courageous. These instrumental values are key instruments in achieving the preferred end-states.

Howard (1977) is determining the terminal and instrumental values the same way as Rokeach (1973). Howard has created a hierarchical evaluative structure (Howard's Semantic Structure) where one level is headed by terminal values and the other is led by instrumental values. Based on Howard's model, customer's terminal values will define the choice of product class and then instrumental values are determining the right brand for the customer. The below picture 6 shows a hypothetical demonstration of Howard's semantic structure. Sustainability training services are used as an example in this demonstration. As one can see there is the three hierarchy levels which are based on products' semantic properties. First hierarchy level is External training services which includes categories Sustainability trainings, Product trainings and Safety trainings. When going down in hierarchy levels, the third hierarchy level in sustainability trainings could be type of trainings that are provided (workshops, e-learning, webinars). Finally, there are variety of companies that are offering these certain training services.



**Picture 6.** Howard's Means-Ends chain model consists multiple hierarchy levels based on products' semantic properties.

Gutman (1982) is describing the perceived customer value of an offering as the combination of benefits that the customer is expecting and experiencing and the undesired consequences that comes in the same package. Benefits and undesired consequences are direct or indirect consequence of buying or consuming the product or service. Key point in this concept is that customer will choose actions to maximize the benefits and minimize the undesired consequences. Gutman has created its own model of Means-End Chain which has similarities with Howard but there are few key differences in the models.

Gutman's (1982) Means-end chain model is based on two assumptions about customer behavior. The first one is that values play a dominant role in guiding choice patterns and the second one suggest that people are grouping the high variety of beneficial products or values into classes to reduce the amount of complexity. On top of these main assumptions, there are two others that play a role in this model. First is that all consumer actions have consequences, and the other is that consumers learn to associate the consequences with the actions. (Gutman, 1982)

As earlier described, consequences resulting from actions can be either direct or indirect consequences. Direct consequences are result of the consumption of the product or service and the indirect consequences come from other people's positive or negative perception of the consumption behavior. Based on this definition, desired consequence can be only reached if the consumption of the product or service occurs. Many times, there are many

options in the market and customer needs to make the decision which of the product in the market would lead to desired consequences. Hence, there is a strong linkage between product attributes and consequences. This is recognized also in the Means-end chain model. Based on these so-called product-use situations consumer learns which actions lead to desired consequences and which ones to undesired ones. (Gutman, 1982)

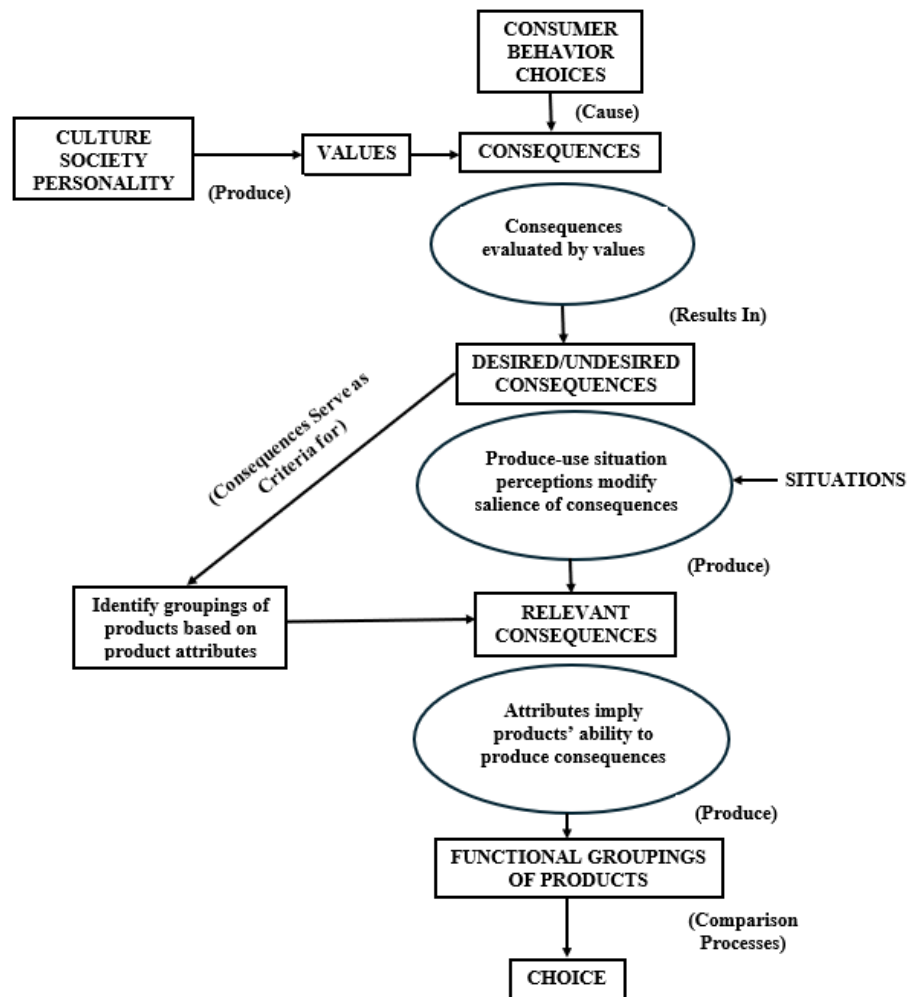
Reynolds and Olson (2001) highlight the importance of understanding the consequences to the customer. Chains of consequences that resulted from product attributes determine the nature of that specific product for the customer. In other words, customer will judge if the consequences were positive or negative and this evaluation will affect if this product will be bought the next time or not. It is also important to recognize that product attributes themselves will not result in any consequences, but the customer behavior is needed to make that happen. Simply put, customer need to consume or buy the product before consequences will occur. (Reynolds and Olson, 2001)

Olson and Reynolds (1983) have proposed six-level model which is describing the attributes, consequences and values in more defined manner as below:

Concrete Attributes – Abstract Attributes – Functional Consequences – Psychosocial Consequences – Instrumental Values – Terminal Values.

To reduce the complexity of the model, the four-level model has become more widely used by the researchers. This four-level model consists of Attributes, Functional Consequences, Psychological Consequences and Values or Goals.

Means-End Chain model is summarized in picture 7. Starting from the top, consequences are a result of customer's behavior choices. These consequences are evaluated based on customer's values which are impacted by the culture, society and customer's personality. This evaluation of consequences will serve as criteria for consumer to identify groupings of products based on product attributes. Consequences will be still evaluated in relation to the situation customer is in which would then result in relevant consequences that impacts how the customer groups the product. The product grouping will help the customer simplify the decision-making process. In long term consumer will learn which products will cause the most desired consequences. (Gutman, 1982)



**Picture 7.** Means-End Chain Model is summarized in process chart. (modified from Gutman, 1982)

Comparing Gutman's (1982) and Howard's (1977) Means-End Chain models there are two key differences. The first one is that the concept of instrumental values is not used. Values and consequences form a base for categorization together with physical characteristics of the product or service. The other difference relates to hierarchy levels in the models, Gutman is depending on the multiple value and consequence levels instead of multiple hierarchy levels that can be found from Howard's model.

Gutman (1982) states that it is important to understand customers' categorization process to understand how the customer is organizing their thinking about specific product alternatives. Grouping is determined by the product's properties but the choice in which properties consumer focuses is affected by their values. As an example, external training services would

increase the employees understanding of sustainability (desired consequence) which could increase the employee motivation and lead to higher employee engagement (company value). On the other hand, external training services requires investment (undesired consequences) which can be seen as negative impact to company's result (company value).

Customers are making decisions to solve problems, in the means-end chain model called desired consequences, which are linked to customers' values and goals. Based on this the product attributes as such are not the most important part of customer's decision making but the focus is on the consequences of the attributes. (Reynolds and Olson, 2001)

To understand the customers' decision-making process, it is important to understand the choice alternatives and criteria customer have based on the contextual situation customer is in. Coming back to the example of external training services earlier in this chapter, one could ask from customer "What training services have you bought during the recent year?". This way customer would identify the consideration set of different alternatives that will have a significant effect on the choice criteria. By understanding the consideration set of alternatives customer has, the seller can investigate further what are the attributes or consequences resulted in these alternatives. In this way seller will be able to define the choice criteria in that specific context. (Reynolds and Olson, 2001)

To identify why customer choose to favor a particular company, both positive and negative factors related to that company needs to be investigated. This can be done by asking more direct questions such as "Why customer is choosing Company A and not Company B?" or "Why don't you buy the product more often from Company A?". The positive factors that are attracting the customer to the desired brand are called equities. Disequities instead are factors that keeps the customer buying more from the particular company or brand. To conclude, equities provide financial value for the brand and disequities limit or reduce it. (Reynolds and Olson, 2001)

## **2.5 Summary**

Sustainability has been an increasingly hot topic in B2B companies. In recent years, there has been a realization that only sustainability is not enough as the degenerative economy has weakened the planet's regenerative capacity in a way that long term human welfare is at risk. Regenerative business models acknowledge that human societies are deeply connected and depended on the health of the biosphere. (Konietzko, Das, et al., 2023)

When discussing about environment and business models, there are many different terms in use. Chapter 2.1.1 focused on explaining the differences between sustainable, circular and regenerative business models. Sustainable business model's base is triple bottom line which describes the balance between economics, ecology and ethics. Circular business model focuses on the material productivity and closed-loop systems which means maximizing the value creation with minimum energy and raw material input. Regenerative business model is seeking to find the best possible way to co-operate with the Earth system. As sustainability is still the most commonly used term in B2B environment it will be used in the following chapters in this thesis.

Recent and upcoming regulation in the area of European Union focuses on finding ways to reduce the overall packaging waste amount and focus on sustainable forest handling. PPWR, SUPD and EUDR are all setting demands and requirements to the packaging materials in the European market. Depending on the product, the demands can vary from total product bans to EPR fees or new design requirements for the packaging material. These regulations have an influence on the packaging industry companies' business already today and will have it also in the future.

Hecker and Toivonen (2024) and Tandon et al. (2024) have investigated the challenges of B2B companies related to sustainability transformation. Based on these studies, five main challenge areas were identified: Lack of government support, Lack of commitment to a complex and resource intense R&D process, Lack of sustainability knowledge, Lack of commitment throughout the value chain and Lack of employee support. These challenges cause delay in the journey towards more sustainable business models in B2B business.

Fourth section focused on customer value and decision-making process which is tightly connected to customer values. Gutman (1982) is describing the perceived customer value as the combination of benefits that the customer is expecting and experiencing, and the undesired consequences that comes in the same package. Gutman's (1982) Means-end chain model describes the linkage of product attributes, consequences of consuming the product and the values of the customer.

Means-end chain model is based on two main assumptions and two supporting assumptions. The first one is that values play a dominant role in guiding choice patterns and the second one suggest that people are grouping the products or values into classes to reduce the amount

of complexity. Two supporting assumptions are that all customer actions have consequences, and that customers learn to associate the consequences with the actions. (Gutman, 1982)

### 3. CASE COMPANY

The case company is a stock listed company with long history of industry background. This case company is acting globally but has the biggest share of its sales in Europe. The case company sees sustainability as an opportunity driving its growth strategy forward. The company is divided into divisions. This thesis is focusing on the division which is working with packaging materials. The customers of the case company are brand owners, converter groups and retailers. In this area, the case company sees a strong demand for eco-friendly and circular packaging. (Internal material, 2023)

The case company is providing paper and paper board products made of both virgin and recycled fibers. Based on company's estimation fiber-based packaging is the fastest growing packaging materials globally and it is evaluated to be growing faster than plastic alternatives in the long-term. The case company has the goal to provide its customers innovative and customized alternatives which helps them to reduce their environmental footprint. (Internal material, 2023)

The case company aims to have all its products and solutions to be 100% regenerative by 2050. By reaching this goal company aims to reduce climate impacts by sequestering more carbon emissions than it emits and supporting biodiversity restoration. The case company has set also smaller targets in the roadmap towards 2050. By 2023 target is to reduce absolute carbon emissions dioxide emissions by 50% baseline being the year 2019.

The emissions are divided into three scopes based on the GHG protocol followed in the industry. Scope 1 includes the upstream activities which means indirect emissions that relate to purchased electricity, steam, heating and cooling. Scope 2 includes the direct emissions of company's operations. Scope 3 includes the downstream activities which will result from the processes after company's operations. This would mean emissions in supply chain, transportation, and customer operations. (World Resources Institute, World Business Council for Sustainable Development, 2011)

Concerning circularity, the case company has a target of all its products and solutions to be technically recyclable by 2030. Technically recyclable means that the product can be recycled under right tested circumstances but there might not be recycling facilities available. Third milestone by 2030 is to preserve biodiversity by measuring variety of biodiversity impact indicators and reach 100% compliance based on these indicators. (Internal material, 2023)

The sustainability approach of the case company is based on The Planetary Boundary concept which has been developed by the climate scientists at the Stockholm Resilience Centre. Rockström et al. (2009) introduced Planetary Boundary concept which included an estimation of safe operating space for humanity in respect of the functioning Earth System. Rockström et al. (2009) identified nine planetary boundaries which are Novel entities, Stratospheric ozone depletion, Atmospheric aerosol loading, Ocean acidification, Biogeochemical flows, Freshwater change, Land-system change, Biosphere integrity and Climate change. Based on the latest update of the boundaries six of nine have been transgressed (Richardson et al., 2023).

The key feature in Planetary boundary concept is the ideology that the state of the Earth system is seen as a whole. This differs from conversation where separate issues, such as climate change and biodiversity loss, are addressed as individual topics concerning environment. In these conversations, the human-caused disturbances' nonlinear interactions and resulting effects to Earth system are not taken into account. (Richardson et al., 2023)

Planetary boundaries framework aims to define and quantify the limits in nine areas which would allow Earth to remain in a “Holocene-like” interglacial state. This Holocene state means stable and warm conditions where life-support systems and global environmental functions has remained similar after the last ice age. Due to human activity Earth has evolved and is continuously evolving further away from the Holocene's window to so called Anthropocene epoch. Earth's global mean temperature had been stayed stable from the Neolithic (9000 years before the present) until the Industrial revolution where Anthropocene epoch is seen to be started (Osman et al., 2021). The Holocene state of Earth is used as a benchmark state of Earth in Planetary boundary concept evaluation of the Earth system. (Zalasiewicz et al., 2017; Waters et al., 2016)

### **3.1 Sustainability service portfolio**

The case company has launched tailored sustainability service portfolio during spring 2024. This service portfolio includes sustainability related services where the case company has expertise in. At the moment, this service portfolio focuses on three different areas: circularity assessment, sustainability trainings and life-cycle assessment services.

Circularity assessment service helps our customers to understand what the market specific requirements regarding packaging circularity are. This analysis includes analysis regarding

the availability of the collection and recycling streams, possible EPR fees and plastic tax comparisons. The case company has recognized the complexity of the regulation in different markets and have gained expertise in the area to be able to understand the requirements of the different markets.

Life Cycle Assessment (LCA) is evaluation of the environmental impacts of the product's entire life cycle based on material flows. There is ISO standardized methodology in place for conducting LCA. The services are always tailor made for the specific customer's needs to make sure that relevant services are then included based on the needs. LCAs are many cases made when customer is considering changing the packaging materials and wants to understand the sustainability impact of the change.

Last of the services are the sustainability trainings, which aim to educate customers with fact-based information regarding the forest-based packaging materials. The case company is providing different type of training services for the customers. It can include sustainability workshops together with the customer or it can be e-learning modules which can be then used for self-learning. The e-learning module is consisted of five parts; Introduction to Packaging Sustainability, Sustainable Fibers, Sustainable Packaging; Circularity & Recyclability and Climate.

### **3.2 Brief analysis on the case company's sustainability approach**

The case company is having an ambition to provide only regenerative products and solutions by 2050. The case company has also made commitments toward net zero carbon emissions together with other global companies to reach net zero carbon emission target faster than defined in the Paris agreement. When analyzing the case company's (more specifically the division focusing on packaging materials) sustainability approach and the current business model one can recognize initiatives and features from different environmental approaches found from the literature.

One can identify the case company's approach to have features from both preservative approach defined by Hellström (2023) and sustainable business model defined by Konietazko et al. (2023). Approach is to mitigate the harmful consequences and lower the footprint of the product portfolio. For example, material and energy efficiency is in focus which can be seen in more lightweighted packages that can still ensure the packaging integrity.

Case company's primary way to lower carbon emissions is to do that through action in its own operations and with partners in its value chain. Still, there are harmful consequences that the case company hasn't been able to affect efficiently. Carbon offsetting is used in these cases to support customers to lower their environmental impact. One could see this as a feature related to exploitative or risk mitigation approach defined by Hellström (2023). In exploitative business approach the negative implications to environment are seen as unavoidable consequence to do business but on the other hand by doing offsetting through projects that are third party verified and measurable, the case company is minimizing the environmental impact through channel that allow the business to continue.

On the other hand, the case company is also focusing on actions that can be seen as restorative approach defined by Hellström (2023). One of the examples is the restorative work with biodiversity in the harvesting sites. There are also clear measurable targets and key performance indicators set in to follow the development of the biodiversity in the case company's working areas. To support this work, the case company has also initiated cooperation in this field with institution focusing on nature protection.

Based on Ellen MacArthur Foundation's (2023) second principle regarding circularity there are definitions of durable and consumable components. When discussing about packaging materials one should focus on the definition of consumable components. In the circular economy definition these consumables would be made of biological ingredients that are non-toxic and can be returned back to biosphere. The case company has also a clear focus on circularity of its products. One of the key areas in research and development is to find those type of product solutions where product could be either recycled as efficiently as possible or even composted.

Concerning recyclability, the biggest difficulty is not the technical recyclability but the recycling facilities available. Big part of packaging material portfolio of the case company is already technically recyclable but the availability of recycling infrastructure in the target market area can be difficult to find. This area is under investigation in the case company as without the relevant infrastructure the packaging material end up not to be recycled at all. This would be then closer to the Ellen MacArthur Foundation's (2023) definition of the "buy-and-consume" business model of today. The case company has also established collaborations together with its customers in the area of recycling.

There are also some products in the case company's portfolio which are compostable. Composting of the product is already one step closer to Ellen MacArthur Foundation (2013) definition of circular economy where the industrial system is restorative or regenerative by intention and design.

Based on the literature analysis in this theoretical part, the case company is taking steps towards regenerative business model. Still one can identify also features from the other environmental approaches described by Hellström (2023). As described in this chapter the case company is working together with its customers and institutions to move forward in the journey towards regenerative business model. It is crucial to recognize that to succeed in achieving the ambitious sustainability goals in B2B environment collaboration between companies must be done. This was also highlighted in the studies of Tandon et al. (2024) and Hecker and Toivonen (2024). Without the commitment from the whole value chain sustainability transition cannot be executed.

## 4. METHODS

In this thesis we are focusing on case study in the packaging industry. Interviews were performed by following semi-structured interview methodology. To understand customer needs and values better, features of particular semi-structural method, soft laddering method by Reynolds and Gutman (1988), was used in the empirical part of the thesis. Soft laddering method (Reynolds and Gutman, 1988) is related to Means End Chain model that has been presented earlier in the theoretical part. The first chapter is introducing semi-structured interview method, and the second chapter is focusing on soft laddering method.

### 4.1 Semi-structured interview method

Semi-structured interview method is popular method to be used due to its flexibility. The method guides towards having a pre-defined interview questions under identified themes, but they don't have to followed strictly as in structured interview method. Question list is used to stay consistent between interviews. Questions are used to support discussion under the themes and topics that interviewer would like to learn more about. Question list can be well defined or then it can be only having few questions that support interviewer to cover the main themes and topics during the interview. (Qu, Dumay, 2011)

Important feature in semi-structured interviews is to approach the topic discussed from the interviewee perspective and give interviewee space to answer the questions freely. Semi-structured method is giving freedom also to the interviewer to ask questions more based on the flow of the interview. The intention is to ensure that the interest themes are covered but the interviewer can change the order of the questions that are planned beforehand. Basis of the method is human conversation, so the intention is that both interviewer and interviewee participate the interview. (Qu, Dumay, 2011)

On top of the questions listed in the pre-defined question list interviewer's task is to ask so called probing questions from the interviewee. Probing questions are follow-up questions on the answer given by the interviewee and the intention is to get comprehensive understanding on the topic discussed. To be able to ask follow-up questions spontaneously during the interview, it is beneficial that interviewer has enough knowledge on the themes and topics that are discussed during the interview (Qu, Dumay, 2011).

To create open and engaging environment for the interview, interviewer has two important tasks during the interview. First is listening to the interviewee in a way that interviewer can

clarify or ask probing questions on points that were not fully clear. The second is to acknowledge the points which needs to be clarified or reflected later in the interview. Taking care of these two points also support interviewer's intention to get better and more accurate understanding on interviewee's response on the topics discussed. (Galletta, 2013)

Due to the probing questions interviews are likely to result in different results based on the interviewer. This is important to acknowledge when planning the interviews and analyzing the results. Due to this fact, the answers of the interviewee cannot be kept as objective truths but more of tools to create more understanding on the themes under certain circumstances created by the interviewer. (Qu, Dumay, 2011)

When interviewer analyzes the results of the interviews the target is to find thematic patterns that are coded. Based on these analyzes interviewer find thematic patterns from the following interviews. There is a risk that the interviewer's focus shifts too much on finding the thematic patterns than to listening the interview and getting new insights. By focusing too much on the thematic patterns found in previous interviews, interviewer might accidentally be directing the questions in a way that the earlier findings could be confirmed. This might blind interviewer from seeing other aspects interviewee brings to the table. (Galletta, 2013)

#### **4.2 Soft laddering method**

Laddering method was originally introduced by Hinkle in 1965, and it was used at first in the field of psychology. Hinkle (1965) designed the laddering method to access a person's subordinate constructs related to preferred self-hierarchy. Since then, laddering method has been used in many other fields as well, such consumer research and human resource management. In this thesis focus is on Reynolds and Gutman's (1988) soft laddering method which is closely connected to earlier described Means End Chain model. Reynolds and Gutman's qualitative research method has been widely used to understand the deep drivers in consumer decision making.

This thesis seeks to understand customer needs concerning sustainability services in packaging industry. By using soft laddering method in the customer interviews, interviewer try to understand the needs of customer companies derived from the company values. By understanding the needs and values of customers it is possible to understand the product attributes that can support in these areas. Finally, this understanding helps to see how the case

company's sustainability service portfolio is supporting customers as its current form and how it could be developed further.

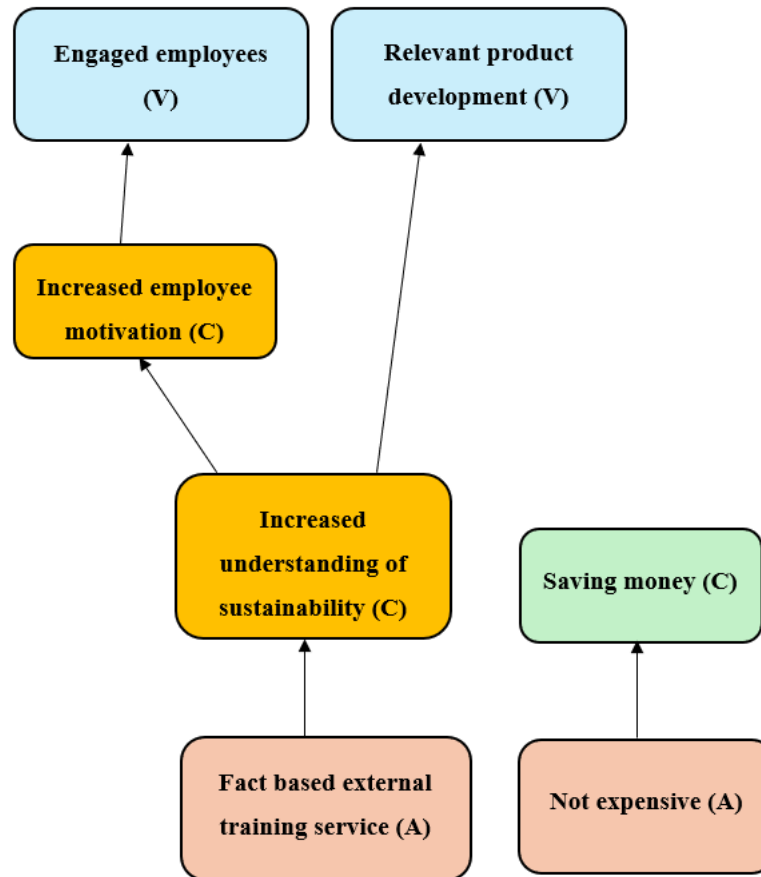
Laddering is semi-structured qualitative method where the questions are open in a way that the customers can freely answer to the questions with their own words. As discussed in the previous chapter interviewer's task is then to clarify the answers if needed. Semi-structured character of laddering comes from the predefined question list which stays the same from one interview to another. As mentioned in the previous section, question list works as a base that supports the interviewer during the interview to make sure he or she covers the important topics, but it is not the only questions asked during the interview.

Laddering aims to translate the attributes (A) of products into meaningful associations to customer's desired consequences (C) and values (V). The different levels of A-C-Vs are called ladders, and these will be discovered by forming a series of probing questions. In this way interviewer can understand how customer is grouping and categorizing the products, and why certain attribute or consequence is so important. (Reynolds and Olson, 2001)

The ladder interview is consisted of two main parts. First interviewer is seeking to understand the key choice criteria that customer is claiming to use when making the choice. The second part is about understanding why these criteria are important to the customer. This is done by using questions starting with "Why". As a result of the interview, interviewer will form a hierarchical value map which involves the identified key element and the connections between them. (Reynolds and Olson, 2001)

If continuing with the external training services example, first interviewer would ask "What training services have you bought during the recent year?". The answer could be workshop trainings from Company A and Company B. The next probing question could be then "Which one you prefer the most and why?". When respondent is then continuing by saying that Company A is the preferred one due to more qualified trainers and lower price compared to competition, interviewer can identify these two factors as attributes. Then continuing to get closer to consequences and values interviewer could ask "Why do you invest in training services?". The respondent could answer that it is important to increase the knowledge of employees in the area of sustainability. Respondent also mentions that sustainability is recognized to be important area that will affect the product requirements in the future and employees have requested to understand this area more to understand the market needs of the future. With this answer interviewer can already identify consequences and values related to

training services. See the hierarchical value map (HVM) of this example in below picture 8. (Reynolds and Olson, 2001)



**Picture 8.** Simple example of HVM of external training services. In the picture consequence in green box is representing the functional consequence and then in the orange boxes psychological consequences. (modified from Reynolds and Olson, p.35, 2001)

With laddering technique, it is important to create an interview environment in which the respondent feels psychologically safe to answer the questions. Respondent should have the feeling that there are no wrong or right answers to the questions as the whole idea of the interview is to understand respondent's view on the topic of interest. Respondent should be positioned as an expert in the interview and the interviewer as a neutral facilitator of the process. By facilitating the interviewing process interviewer is able to control the interview but still letting space for respondent to answer also the more broad and deep diving ques-

tions. It is critically important also that the interviewer identifies the elements that respondent brings up so that interviewer can then ask more follow up questions. (Reynolds and Olson, 2001)

### **4.3 Interview execution**

To understand customers related to this specific case better customer interviews were conducted by using semi-structured qualitative method. Features from soft laddering method (Reynoldson and Gutman, 1988) were used in the interview process to get more insights on the needs and values of the customers. Five customer interviews were conducted virtually by using Microsoft Teams. One hour time was reserved for one customer interview and that proved to be enough time to go through the questions and also discuss openly around the topic.

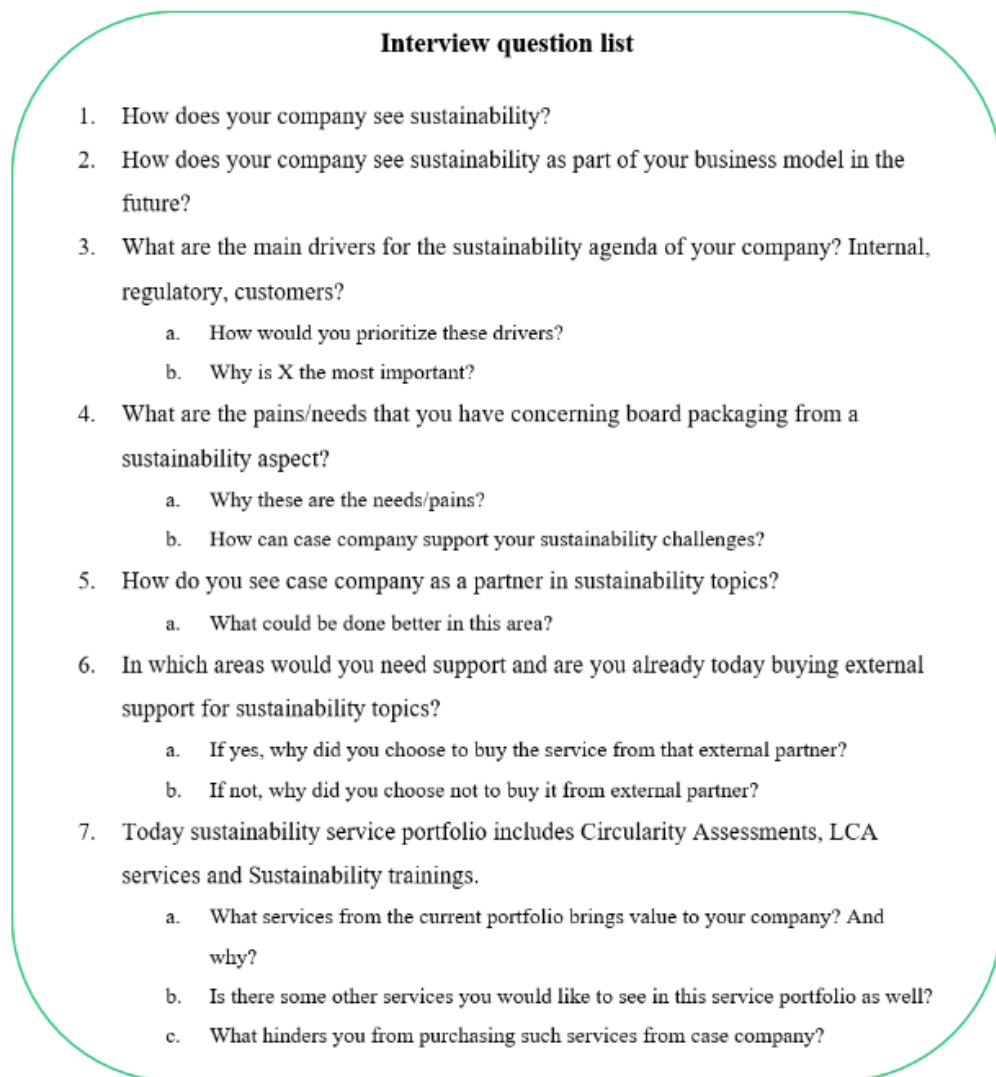
The interviewing process included three steps. First step was the preparation step which included planning of the interview questions, deciding the right customer contacts to be invited for the interview and then schedule the interviews with the customers who wanted to participate. There were three key criteria for interviewee selection:

1. The relationship between the interviewer and the interviewee. One of the key elements in laddering method is to create an open and safe atmosphere to the interview. Hence, customers with regular contact with the interviewer was first point of contacts for the interview.
2. The customer's knowledge regarding the topics discussed during the interview. To make sure that the information gained from the interviews were relevant to the research, the customers chosen for the interview are the ones that are working with the areas in focus during the interview.
3. Co-operation in both packaging development and sustainability is active between the case company and the interviewed company.

The next step was to conduct the actual interviews via Microsoft Teams. During the interview the thesis writer (also the interviewer) wrote notes based on customer answers. Short pre-material of the sustainability service portfolio was sent to the customers prior to the meeting. The service portfolio was also introduced during the interview to make sure that

interviewees had the needed background information for the interview. There was an interview structure made by following the semi-structured method. Some features of soft laddering method were also considered to get understanding on the customer needs and values.

The interview question list can be seen below in picture 9. The interview question list was kept the same from interview to another, but the order of the questions differed depending on the flow of the interview. Interviews were all started with the introductory questions to the overall theme, sustainability. With questions 3, 4, 6 and 7 were formed based on the laddering method to understand the reasoning behind the answer to the main question further. In these questions predefined probing questions were used to support interviewer's job during the interview. On top of below defined question list also spontaneous probing questions were asked during the interview depending on interviewee's answers.



**Picture 9.** Predefined question list was used in all the interviews to support interviewer's work.

The third and final stage in the interview process was to analyze the answers after all the interviews. Analysis was started by identifying themes that were brought up in the interviews. This helped with finding commonalities between interviews and then finally linking these themes also to literature findings described in the theoretical part.

#### **4.4 Reliability of the study**

Tuomi (2018) has described factors that are important to recognize in relation to reliability of qualitative research. The following Tuomi (2018) highlights that the research piece needs

to be investigated as a whole and not section by section to evaluate the consistency of the work.

When evaluating the reliability of this thesis, it is important to evaluate critically the interviewer's relationship with the interviewees (Tuomi, 2018). It was deliberate choice to choose interviewees that are already in connection with the interviewer to create an open atmosphere. On the other hand, there is a risk that interviewer (thesis writer) has certain assumptions already when interviewing the familiar person and the interviewer might unintentionally lead the interviewee with the questions to the expected direction. To create more objectivity to the interview situation the interviewer mentioned in the beginning of the interview that as this is research work the questions asked might be about topics that have been discussed earlier in other meetings already, but they are asked to make sure that interviewer is not making her own assumptions possible to the wrong direction.

One factor that should be analyzed in relation to reliability is the amount of interviews (Tuomi, 2018). In this thesis the interview amount is fairly small (five), and it is important to take this into consideration when assessing reliability of the analysis. This concern was taken into consideration by choosing the interviewees in a way that they would present the company well in the area of interest.

On top of the interviewees, two customers were not able to join for an interview and they gave comments via email based on the research questions interviewer shared with them as an introduction to the topic. Also, these comments were taken into consideration in this thesis but it is important to acknowledge that these were only short comments based on the short introduction given by the interviewer via email. There is higher chance for wrong assumptions as there was no chance to discuss more deeply around the answers with these commentors. To lower the risk of wrong assumptions, thesis writer was careful not to make any conclusions only based on these comments that came via email, but they were used more as a supporting data in the results.

One factor related to the reliability and validity of the research is related to the used laddering method. When using laddering methodology, it is important that the interviewer would be acting as a neutral facilitator who controls the interviewing process. This should be done by recognizing the elements interviewee brings up and then asking for follow up questions to be able to deep dive into the needs and values of the company (Reynolds and Olson, 2001). Due to the lack of research interviewee experience of the interviewer it can be so that some

elements were not recognized or the made follow up questions were not modified in a best possible way. This can lead to wrong conclusions.

## 5. RESULTS

As describe in the earlier chapter, the interviews were executed by following the principles of laddering method. Finally, five interviews were held via Microsoft Teams. The interviewees were selected based on the knowledge about the topics discussed during the interview and their companies' activity in the area of sustainability. It was clearly stated from the beginning of the interview process that the discussions of the interview will be treated anonymously in the thesis work. For this reason, interviewees are referred in this thesis as Interviewee A, B, C, D and E.

On top of these five interviews, two customers gave comments by email on the main research questions. These comments are also used in the thesis, and they are referred to as Commentor F and G in the result analysis. It is important to note that as these comments came by email there was not the opportunity for dialogue as in the interviews. Due to this reason, the input from these answers was not as comprehensive as from the interviews and this is also taken into consideration when discussing about results.

The notes from the interviews were analyzed and categorized under seven themes. These seven themes were Paper board supplier support, Sustainability services, Customer's sustainability strategy, Packaging Regulation, Packaging development and innovation, Consumer expectations and Commercial topics. These themes helped to find commonalities between interviews and later make conclusions on the researched area.

In below table 1, topics that were raised during the interviews are grouped under five themes described above. The letters in brackets are describing the interviewees and commentors who brought that certain topic up during their interview or email.

Supplier support	Sustainability services	Customer sustainability strategy	Packaging regulation	Packaging development and innovation	Consumer expectations	Commercial topics
More support on packaging design (A)	Lack of updated fact-based sustainability knowledge (A,C)	Goals to fade out from aluminum and plastics (A,C,E)	Packaging regulation is a driver for sustainability (A,B,C,D,E,F,G)	More sustainable packaging should be convenient (A,E)	Internal discussion on consumer expectation, no fact-based data (A)	Material price is one factor that affects material choices (B, C, E)
Customer needs exact LCA data (B,C)	Internal team or third party to execute LCAs (A,B,C,E)	Lack of holistic product portfolio strategy (A)	Sometimes customers go "wrong way" to increase the recyclability (B)	Individual product development efforts (A)	Consumers are more demanding on sustainability topics (C)	Case company not popping up from competition in the media (C,E)
No need for packaging design support (C)	LCA cannot be purchased from case company in larger scale as it is one of the suppliers (A,C)	Packaging portfolio is screened regularly internally (A)	Combination of regulation and high product safety demands can be sometimes difficult (C)	Packaging development requires investment (A,C,E)	Consumer preferences guide which products end up in the shelves (E)	
Clear sustainability strategy that supports customer's sustainability strategy (D,E,G)	Circularity assessment is interesting tool to evaluate packaging sustainability (B)	Sustainability is linked in business models (B,C,D,E)	Different needs in every market especially with circularity (B,C)	The role of packaging development has increased (C)	Consumer expectations vary regionally (E)	
Satisfied for the sustainability support (D,E)	Case studies in different markets and end uses (A,B,C,E)	Ambitious sustainability targets (A,B,C,D,E)	Difficulty to translate general guidance from regulation to corporate actions (D)	Fear of failure in development makes it hard to be the first mover (C)	Sustainability thinking is license to operate (C)	
Transparent sustainability data reporting (C,D,E,G)	The availability of sustainability services depends on the region (D)	Dedicated sustainability organisation in place (A,B,C,D,E)	Packaging regulation is not the most important factor (E)	Transition from plastics to paper board material causes technical problems (C)		
Sustainable sourcing of the raw material (F,G)	Service portfolio interesting for companies with "less mature" sustainability strategy (D)	Social sustainability important part of sustainability framework (D,E)		Circularity and emission reduction big drivers for packaging development and innovation (C,D,E,F,G)		
	Case company's LCA is not seen competitive solution (E)			Lightweighting of the paper board material is one very important area to continue developing (E)		
	Important to look more outside European market (E)			Sustainability services can lead to sustainable product development (G)		
	Widening the training service to other materials (E)					
	Possibility to enhance the brand reputation (G)					

**Table 1.** Interview comments were categorized under seven different themes to support analyzing process.

All the interviewees work in global companies that have measurable sustainability targets (A, B, C, D, E) and it was mentioned in the interviews that the sustainability thinking is embedded in the strategy as well (B, C, D, E). Interviewed companies have also dedicated teams that work in the area of sustainability (A, B, C, D, E). There was some variance how the sustainability strategy implementation was handled in different companies. The unifying factor was that sustainability thinking was part of the decision making in all companies. One interviewee mentioned that sustainability thinking is “a license to operate nowadays” (C).

Since interviewed companies have clear sustainability targets and sustainability strategy, this is also expected from the packaging material supplier. Supplier should have clear sustainability strategy that follows regulation and is also aligned with customer’s sustainability strategy (D, E, G). Interviewees expected that supplier can report sustainability related data transparently to the customers and authorities when needed (C, D, E, G). Commentors F and G also mentioned that it is expected that supplier is sourcing their raw materials in sustainable manner.

In many of the interviews there was a comment that customers are expecting suppliers to support in their sustainability related initiatives when needed (D, E, G). One interviewee specified that supplier is expected to have their own clear sustainability strategy including aspects of decarbonization, internal frameworks and guidelines (D). It is also expected that supplier’s strategy would support customer’s sustainability strategy. Two interviewees (D, E) highlighted the social sustainability aspect. It was mentioned that the social sustainability is an important part of sustainability framework and supplier is expected to align on the guidelines and regulations on this field of sustainability as well.

Interviewee D mentioned that there is a lot of regional variances in the maturity of sustainability strategy of their partners. Based on the interviewee’s comments European partners are normally in a quite mature level with their sustainability strategy. Asian partners are not as mature as European partners, but they are willing to develop themselves and learn. As a third place in this ranking interviewee placed North American partners as there is lower ambition for the sustainability thinking.

In the packaging development processes sustainability thinking means that already in the beginning of the development process also sustainability aspect is taken into consideration.

Interviewee C mentioned that the role of packaging development has increased in their company although it is not their main business area. Based on three interviews and two commentors main drivers for packaging development and innovation are circularity of the packaging materials and the emission reduction possibilities (C, D, E, F, G). It was mentioned that it is hard to justify development efforts that would go against the company sustainability targets. One interviewee (E) raised that one key initiative to lower emissions of packaging is to continue to focus on lightweighting the packaging material without compromising the packaging performance. Commentor G saw sustainability service portfolio as one way to lead the packaging development towards more sustainable direction.

Driver for sustainability that all the interviewees and commentors mentioned was the recent or upcoming regulation in the European Union (A, B, C, D, E, F, G). It is crucial for companies to follow the regulation requirements and prepare as well as possible to those requirements beforehand. Fulfilling the regulation requirements is license to operate in the regulated markets. Also, many of the companies were not fulfilling only the regulation requirements but companies' internal targets went beyond that. One interviewee (E) mentioned that although regulation is one of the drivers it is not the key driver of packaging development for them. Interviewee explained that their sustainability work has been ongoing for a long time already, so they don't see the packaging regulation as a pushing force to development, but it is more the internal drive that pushes their sustainability strategy.

When interviews were held, there were still many uncertainties related to the requirements of the upcoming Packaging and Packaging Waste Directive. Interviewees (B, C) described that this uncertainty related to packaging makes it hard to predict the right way forward in packaging development. The EU regulation related to packaging is not straight forward because every country will create their own legislation based on the regulation. This means that there are different demands in different countries already inside the EU which creates a lot of complexity to the packaging development only in Europe already (B, C).

One interviewee (C) commented that due to the complexity and vagueness of the market it is hard to be the first mover as there is a high risk of failure. Interviewee mentioned that "Everyone is waiting for someone else to make the first move in packaging development." This can cause even more delay to already long R&D processes related to new packaging development.

It was mentioned in one of the interviews that regulation can also direct the packaging development towards more unsustainable solutions (B). Due to the target of high fiber share of the packaging there have been initiatives to increase the share of paperboard while keeping the plastic amount the same. This would then lead to unnecessary increased packaging waste amount as the packaging weight and the amount of used raw materials increase. The regulation is taking overpacking into account, but it is possible to increase the packaging weight due to packaging performance related reasons. This can create a loophole for this type of unsustainable development.

Other example mentioned during the interviews (A) was the requirement related to recycled content of the packaging. The target in the regulation is to decrease the usage of virgin raw materials but on the other hand due to packaging performance related reasons higher recycled content amount in the packaging requires higher packaging weight which means higher amount of raw material. The need for higher amount of raw material is related to the quality of the recycled fiber material.

Based on three interviews (A, C, E) transition from plastic and aluminum towards renewable material solutions is seen as important target and driver for packaging development. Based on the interviews there are certain challenges which are recognized in the transition from today's used materials towards renewable materials. One point raised up (A, E) was that the performance of plastic is different than paper board. This can cause challenges in relation to either the performance expectation of packaging or technical challenges in the process throughout the value chain if this difference is not taken well into consideration beforehand. Also, product safety of new packaging materials is complex but important topic to consider when changing the packaging material of the product that is used in sensitive end use areas (C). Interviewees mentioned that based on their experience, consumers are expecting same functionalities from more sustainable packaging than from the original plastic packaging (A, E).

Depending on the interviewee there were different views on the consumer expectations related to their respective product field. One interviewee (E) raised also up that finally consumer choices and expectations guide the packaging development and which products end up and stay in the shelves. In the same interviewee it was mentioned that there are big differences in consumer expectation on sustainability regionally. Other interviewee mentioned (C) that consumers have grown to be more demanding when it comes to the sustainability of

the products and packaging. On the other hand, in one interview (A) it was mentioned that in their product field the consumer expectation related to sustainability are much discussed inside the company but were not fully visible in fact-based data.

The price of the packaging material was named as one of the influencing factors in the packaging development projects. Plastics are widely used and known material in the packaging industry and the price level of plastics is also in the lower level compared to paper board packaging materials (B, C, E). In many cases, packaging material changes require also some level of investment throughout the supply chain (A, C, E) and these investments can be hard to justify with only sustainability arguments. Support in this area would be interesting and important in packaging development efforts in the interviewed companies.

Two interviewees raised up that they recognize certain lack of knowledge related to both packaging materials and the packaging related regulation (A, C). One interviewee brought up that clear guidance how to convert the regulation requirements or scientific guidelines into corporate actions would be needed (D). Example raised up regarding this topic was deforestation related regulation where there is broad guideline but no specific actions. Another interviewee (A) mentioned that the complexity of the sustainability related requirements has caused lack of holistic view on sustainability in their company. Interviewee described that there is no clear strategy for different product categories but more individual projects to develop certain packaging into more sustainable form.

One interviewee (C) had recognized that many people in the company have limited or even false knowledge especially about paper-based materials. Interviewee mentioned that one reason can be all the news in the media where deforestation has been a big topic. In these news, forest-based packaging material can be seen as unsustainable material solution. Many interviewees (A, B, C, E) were interested in case studies related to different aspects of sustainability. These interviewees would like to see comprehensive studies in different end use markets where sustainability, regulation and financial aspects are all presented.

The case company have been given publicly available webinars in the area of sustainability. When asked about the webinars held by the case company, interviewees hadn't recognized these in the media. Although interviewees (D, E) mentioned that they have been satisfied for the sustainability support from the case company, based on two interviewees (C, E), the case company is not popping up from the competition in the media space. Commentor G saw that

sustainability service portfolio could be a good possibility to enhance the case company's brand further in the packaging industry.

One interviewee (E) commented that the training service portfolio would be more interesting if it were widened to include also other packaging materials than only paper board. In the same interview it was also mentioned that the case company should be focusing more also to the markets outside Europe. Interviewee thought that more widened service portfolio would be something that is not found in the market at the moment and hence would gain more interest. Other interviewee (D) mentioned that the service portfolio could be interesting especially for the companies that have less mature sustainability strategy.

Two of the interviewees (A, B) raised up that it is especially important that packaging material producer focuses on the end package and not solely on the packaging material. This was discussed from different perspectives, one of the interviewees (A) raised up that even closer collaboration regarding the packaging design from the technical point of view would support their development work. On the other hand, one interviewee (C) mentioned that they have been satisfied the technical support on the packaging material side and is not seeing the value of the case company supporting more on the packaging design or process side.

Two interviewees (A, B) that highlighted the support need regarding the packaging, focused more on the environmental impact and raised up that it is important to take into consideration also environmental impact when packaging material producer is recommending their products. Interviewee highlighted that it would be beneficial to have the environmental impact evaluation included at the same time as the technical recommendation is done. Interviewee B saw the circularity assessment service as a good way to assess the sustainability impacts of the new packaging material that is recommended by the supplier.

One service in the case company's portfolio is the Life Cycle Assessment (LCA). This was discussed during the interviews and all the interviewees mentioned that their company need this type of services constantly. One interviewee (A) mentioned that the packaging portfolio is screened continuously internally. Depending on the company, some had their own team that were doing part of the LCAs and some of the companies bought the service outside from the verified service provider. Two interviewees (B, C) mentioned that it is important to get exact and comprehensive LCA data from the supplier so that they can make accurate analysis on the packaging.

It was seen as a positive thing that also the case company can make LCAs and provide that service but there was also a clear reason mentioned (A, C) why this service cannot be purchased from the case company in a wider scale. This is related to the fact that the case company is one of the suppliers of the packaging materials and due to ethical reasons, it would not be possible to use one of the suppliers as a partner to evaluate itself and competitors. Instead, this service could be used in project basis where case company's material is used in packaging and there is a need to do LCA. One interviewee (E) also mentioned that case company's LCA service is not a competitive alternative compared to available services in the market.

## 6. DISCUSSION

In this chapter, the focus is on answering the research questions of the thesis. There were two research questions in this thesis that are shown below:

**RQ1:** *What are the needs of the customers regarding sustainability services in packaging industry?*

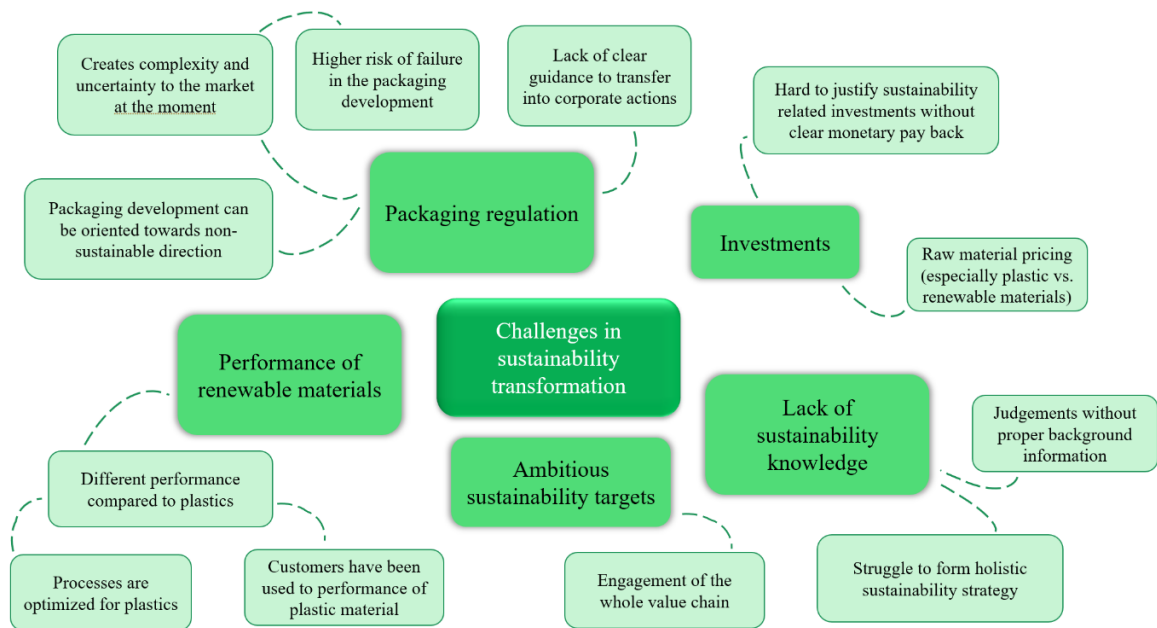
**RQ2:** *How can a tailored sustainability service portfolio contribute to a paper board manufacturer's regenerative business model and create customer value?*

First section of this chapter is focusing on analyzing the challenges related to sustainability transition in the interviewed companies. The second section is focusing on customer needs and values in relation to sustainability and how case company's sustainability service portfolio could support both customer's and case company's journey towards regenerative business. Based on the analyzes in two first sections, third section is followed by summarizing answers to the research questions. Finally, fourth section is giving recommendations for follow up actions in the case company and the future research.

### 6.1 Challenges in sustainability transition

Based on the interviews it was possible to identify certain customer needs regarding sustainability. Theoretical part's recently conducted studies supported some of the findings of the interviews as well.

The needs could be identified by first identifying the challenges customers faced in sustainability transition. Five key areas of challenges were identified based on the interviews: EU regulation, Investments, Performance of renewable materials, Ambitious sustainability targets and Lack of sustainability knowledge. The challenges are summarized in the picture 10.



**Picture 10.** Five challenge areas were recognized based on the interviews.

Based on the interviews all the interviewed companies have sustainability strategy that is embedded in their strategy. There were differences in the strategy implementation between the companies, but all interviewees mentioned that their companies have ambitious sustainability targets related to the strategy. Although ambitious sustainability targets may not be categorized as a challenge in the same way as the other areas named in this chapter, but it was important to highlight here as those targets cannot be achieved without the commitment from the whole value chain, including the case company as well.

The interviewed customers are expecting their partners to have their own sustainability framework that supports their own sustainability strategy. Customers are also expecting their partners to be aligned with the regulation and to be able to do transparent data reporting when needed.

As described in the earlier chapter, interviewees had recognized knowledge gap in their organizations. Both regulation requirements and basic knowledge about paper-based packaging materials were named as areas where interviewees acknowledged a need for more fact-based information. Tandon et al. (2024) also discussed the lack of knowledge in their study and especially the lack of prior knowledge which would be needed to build new knowledge on top of it. Lack of prior knowledge can also affect the perception of the paper-based materials in the interviewed company in this study.

Interviewees brought up also the interest towards webinars and case examples in their end use area. There was an interest to get more understanding of packaging material producer's view on the area of sustainability and packaging related regulation. The case company was not seen as very active in this area and although there have been webinars in the recent history the interviewees were not aware of those. Hecker and Toivonen (2024) highlight the importance of educating B2B customers. It is important to educate customers about the environmental impact of the packaging materials and create the understanding of the long-term benefits of renewable materials. This can also support customer with their selling arguments related to the product.

Recent and upcoming EU regulation was brought up in all the interviews as a driver for companies' sustainability strategy and packaging development. The challenge related to the upcoming regulation is the current unclarity of the implementation of the regulation. It was also raised up in one interview that there is no clear guidance how to transfer the broad guidelines into corporate actions. This causes uncertainty to the packaging industry market and makes also the packaging development more difficult. The vagueness and complexity in the market is also causing delays to the packaging development process due to high risk of failure which makes it hard to be the first mover. Hecker and Toivonen (2024) also described the risks related to scaling up the proof of concept towards industrial scale. The risk would be lower if multiple companies would implement the development steps more simultaneously and, in that way also promote the material to the market.

Packaging development can be even taking wrong turns in relation to environmental impact when certain recyclability thresholds are seen as the only parameter to reach. Also, Hecker and Toivonen (2024) and Tandon et al. (2024) raised up the concern related to regulation. The focus is too much in avoiding the harmful materials, such as petroleum-based materials, than in sustainable material development and their end of life. More government support regarding sustainability initiatives would be needed to promote sustainable packaging development.

Fourth challenging area are the investments that are normally required in sustainability transition process. Some level of investment is required in many steps throughout the value chain which would then require support from multiple parties. It was brought up in the interviews that sustainability related investments are hard to justify without monetary value. It is also

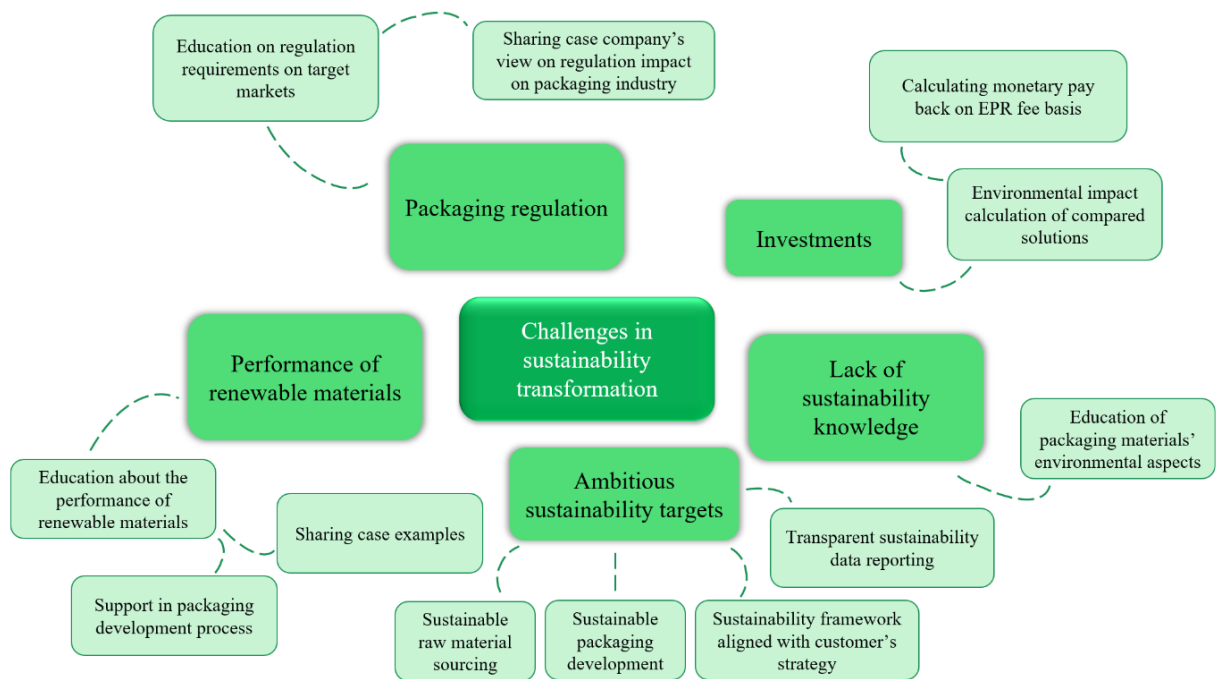
important to recognize that when replacing plastic with renewable materials, the plastic pricing is on the lower level.

Fifth area that was brought up in the interviews is the performance of the renewable materials. Packaging industry has been used to be using plastic material, and the processes are also optimized for that type of material performance. Renewable materials' performance is different compared to plastics and when replacing the plastics with renewable materials this fact needs to be considered. Hecker and Toivonen (2024) highlight the importance to take this into account in the product development process and recognize that due to different characteristics of the material new definitions are needed for packaging validation. By educating customers and making close collaboration packaging development projects the material changes are more likely to be successful.

These challenges that were raised during the interviewees are well in line with the studies investigated in the theoretical part. One of the challenge areas raised by Tandon et al. (2024), lack of employee support, was not raised up in the interviewees. Vice versa, interviewees described that they have dedicated sustainability teams that are in contact in the business side and the sustainability aspect is considered in the packaging development processes.

## **6.2 Customer needs and values**

After identifying challenge areas, the link between the customer needs from the case company in these challenge areas were formed (picture 11). Many of the support needs discussed during the interviews were related to knowledge sharing. Interviewees were especially interested in webinars and case examples related to sustainability transition from different perspectives. Interviewees mentioned that they be interest in study cases where regulation, sustainability and financial aspect are all taken into consideration. It is important to consider also how to market the webinars in the future as the case company has held before some webinars and interviewees were not aware of those.



**Picture 11.** Support needs recognized based on the interviews were mainly related to knowledge sharing.

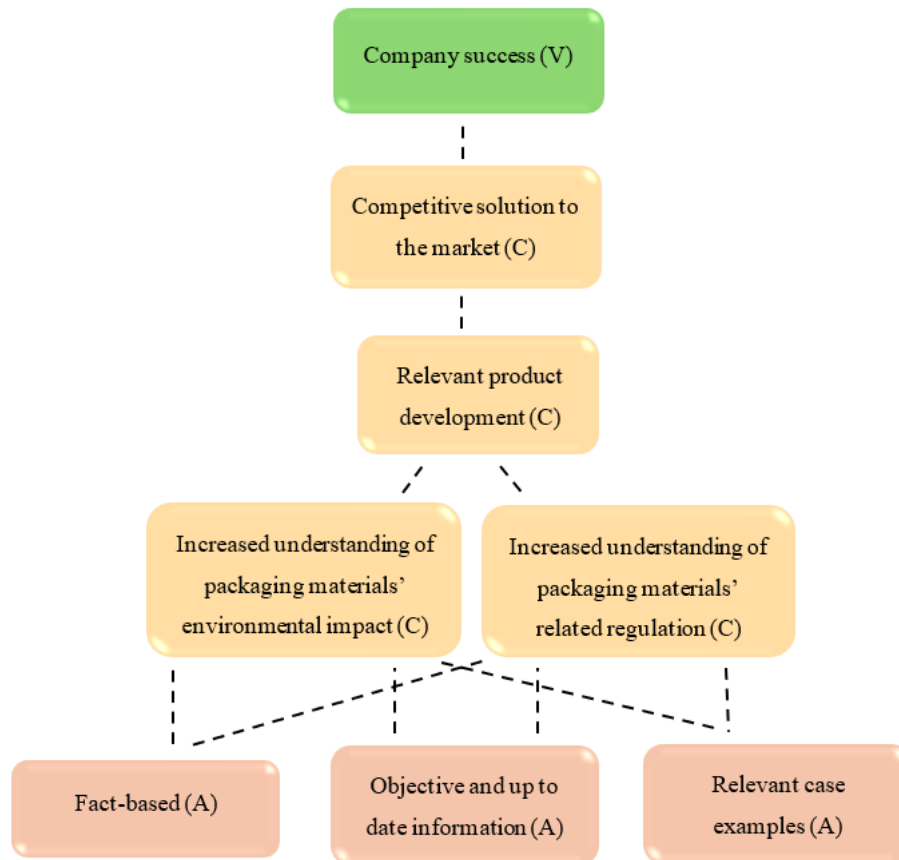
To understand the value that the case company's sustainability service portfolio can provide, this thesis is investigating how the services could support customers on the identified challenges and needs. To link the customer needs more closely to the sustainability service portfolio, the following part is focusing on building hierarchical value maps based on Reynoldson and Olson (2001) laddering methodology. Hierarchical value maps can support on identifying the drivers or values of the customers which are linked to the support needs.

Based on the interviews, lack of knowledge was acknowledged as one challenge area related to packaging materials. Interviewees raised up that they would be interested in learning more on the case company's view on sustainability topics and the impact of packaging related regulation. It was especially mentioned in one interview that they appreciate fact based and objective basic knowledge on paper-based packaging materials. As the regulation is evolving currently it is also important that the information is up to date and relevant to the certain markets customer is interested in.

As described earlier, interviewees raised up the need to increase the basic knowledge on packaging materials' environmental impact but also a relevant and up to date information on

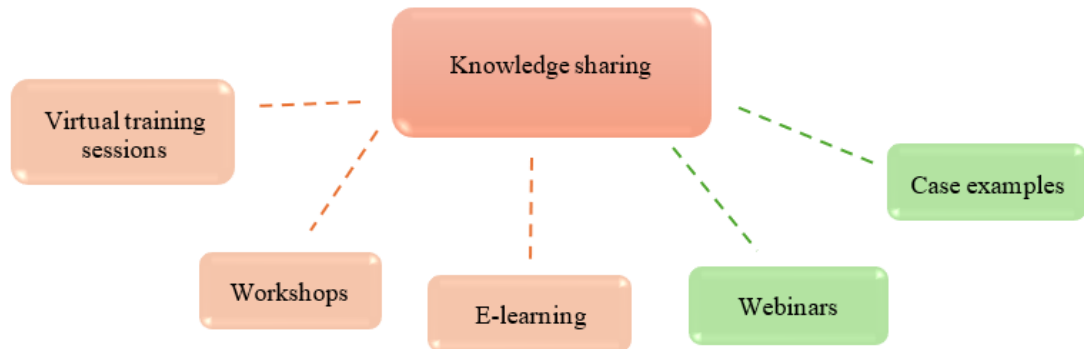
regulation related to packaging industry. This knowledge would help in the packaging development work in the companies and assure that the packaging solutions would be relevant and competitive in the target end use and market. If the customer is successful in developing packaging that is relevant in the market, it supports the success of the company which is the main target and value of the company.

Hierarchical value map concerning the knowledge sharing has been built in picture 12 below. Hierarchical value map is consisted of attributes (A), consequences (C) and values (V). In the interviewees and result analysis the focus has been on identifying the needs which can be seen as desired consequences of the customer when we translate this into hierarchical value maps. Launching competitive packaging solutions to the market can be either seen as a desired consequence or a company value in the hierarchical value map structure. Now it has been categorized as the desired consequence to go still further in the hierarchy towards the value and why the competitive solutions to the company is important. The attributes are describing the features that interviewees brought up concerning the knowledge sharing related services.



**Picture 12.** Hierarchical value map related to knowledge sharing. The letters A-C-V are describing Attributes-Consequences-Values.

There are many different ways to share knowledge to the customers. In below picture 13, it is shown what type of ways to share knowledge is available at the moment under the umbrella of sustainability services and what was brought up by the interviewees. Webinars are not at the moment part of sustainability service portfolio, but the case company has been giving webinars on the topics related to various topics, including sustainability.



**Picture 13.** The knowledge sharing practices under sustainability services are described in orange boxes. The knowledge sharing practices that were brought up by interviewees are in the green boxes.

By educating customers on the area of sustainability, the case company can support customers in their packaging development towards more sustainable packaging. Either if this education is related to the regulation requirements or to increase the basic knowledge on the fiber-based materials, this dialogue with the customers creates possibilities also for the case company to understand the customer needs related to packaging development. This again brings possibility to develop the packaging materials in a direction that bring the company closer to its sustainability targets but at the same time having the understanding what customers need in the future. This would be an example of Kumar and Reinartz (2016) description of customer value as a dual concept which means that first firm creates value for customer and then some part of that customer value can later create value to the firm in different forms.

All the interviewees and commentators mentioned packaging related regulation as affecting factor in their packaging development. It was also mentioned that as the upcoming regulation is not fully clear yet it has created complexity and vagueness in packaging industry. This also complicates the packaging development strategy. On the other hand, in three interviews and two commentators' statements circularity and emission reduction were identified as the focus areas in packaging development. Based on this, there are common focus areas identified between the companies in the field of packaging development although there are still uncertainties in the market.

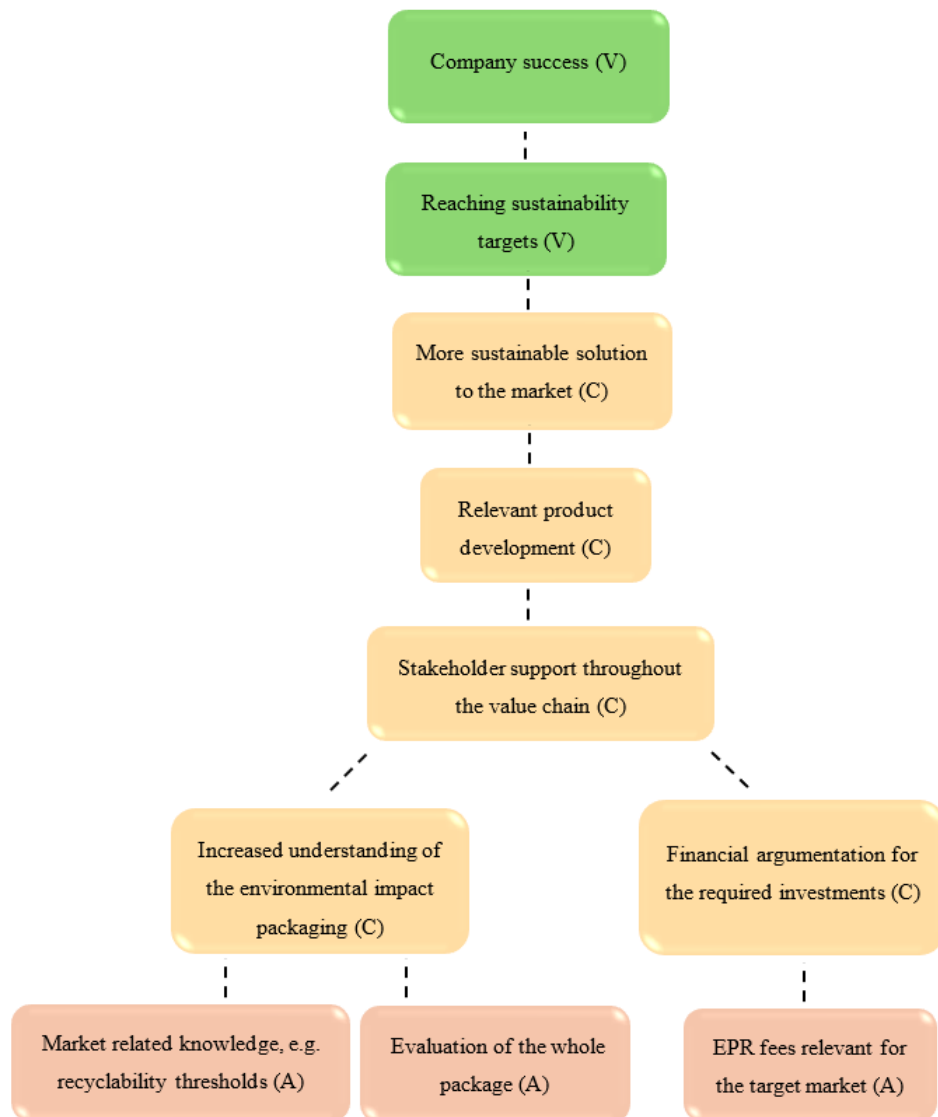
Circularity is also the direction where regulation is guiding the packaging industry. There is guidance related to packaging end of life where it is crucial what is the share fibers, plastics

or other barrier materials. The focus is on increasing the fiber share of the packaging in a way that the packaging can be recycled in a certain recyclability threshold. To make a truly recyclable product, meaning that the packaging can actually be recycled in the end market destination, it is important to collaborate throughout the whole value chain.

Based on the interviews, customers would be interested in hearing paper board manufacturer's view on the regulation impacts on packaging development. This could be done by sharing case examples in different ways mentioned above. One tool to show the differences between packaging solutions is the circularity assessment as it focuses on specific customer cases and take into consideration the target market regulation requirements.

Circularity assessment could support also on other identified challenge area, stakeholders' support on investments related to packaging development. Monetary resources are needed during the packaging development process in different phases. Hecker and Toivonen (2024) bring up this aspect as well in their study and highlight the long lead times of the R&D development processes, which can vary from several months to years. Due to this lengthy process, it can also take time to see the benefits of the change. The understanding of possible EPR fees of packaging in the relevant market area could support the argumentation related to the required investments in the value chain and during the development process. With both sustainability and financial argumentation of the investment related to sustainable packaging development the stakeholders have better reasoning to commit to the packaging development projects.

Circularity assessment services were discussed during the interviews especially in relation to packaging development and how development is affected by the packaging regulation. Having the circularity assessment done in an early stage of the packaging development process, customer would have the comparison of different possible packaging materials, their environmental impact and also the end of life in the certain market area and the possible EPR fees related to the solutions. In the picture 14 hierarchical value map related circularity assessment has been shown.



**Picture 14.** Hierarchical value map related to knowledge sharing. The letters A-C-V are describing Attributes-Consequences-Values.

With gained stakeholder support for the investment there is a possibility to focus on sustainable packaging development projects that would result to more sustainable packaging solutions in the market. By successfully developing packaging towards more sustainable solutions based on both regulation and company's sustainability strategy, customer would be able to go towards their ambitious sustainability targets which are the key performance indicators of the sustainability strategy that is key element of the interviewed customers' company strategies. One interviewee mentioned that sustainability thinking is "a license to operate nowadays". Also, Uldrich (2021) highlighted that the rights of nature may have an impact on the license to do business in the future.

It is important to point out here that circularity assessment works as one good tool to support packaging development but overall collaboration with customer is a key element to support customers with their sustainability strategy. Supplier support with sustainability strategy was highlighted in all the interviews and commentor statements. Based on the interviews it is license to operate also to the suppliers nowadays and in the future. The support is expected in different ways in day-to-day business and sustainability service portfolio is one way to show the support towards customers.

Third of the services, LCA services, were seen as a service that could be beneficial especially in packaging development projects where different material choices are compared to each other. Interviewees also mentioned that it is good that packaging material producer have a possibility to evaluate their own material. Two interviewees brought up that it is important to get exact data related to packaging material emissions instead of using industry averages that are generally available. Based on four interviews, either company is doing the LCAs themselves or they are buying them from third party service provider.

Two reasons were mentioned why LCA services from the case company would not be interested in regular packaging material sustainability screenings. The first reason that two interviewees brought up was that as the case company is one of the suppliers of the packaging materials, it would not be possible to use one of the suppliers as a partner to evaluate itself and competitors in regular screenings. The other reason mentioned in one interview was the price of the LCA services. Interviewee didn't see the LCA service competitive among the competition. This thesis didn't focus on the commercial aspect of the service portfolio, so this comment was not analyzed further in this work.

When linking these reasonings to hierarchical value map structure, the undesired consequences, the case company is one of the material suppliers that are evaluated and the price of the LCA services, linked to product attributes are resulting these interviewed customers to choose the competitive solution from other service provider.

### 6.3 Research questions

Based on the interviews and the built hierarchical value maps, it is possible to answer to the research questions of this thesis.

**RQ1:** *What are the needs of the customers regarding sustainability services in packaging industry?*

Based on the interviews, customer needs related to sustainability services are mostly related to knowledge sharing and support related to packaging development process towards more sustainable solutions. Two of the services in the current sustainability service portfolio were identified to support the best the needs of customers related to sustainability transition in packaging industry. These two services are training services and circularity assessment.

As discussed earlier, interviewees raised up that they have recognized lack of knowledge in different areas related to sustainability transition. To create more understanding on this area, knowledge sharing in different forms could bring value to customers. On top of virtual training sessions with case company's expert, workshops and e-learning, also webinars and case studies could be promoted more.

The other service which was identified to support the needs of the customers based on the interviews was the circularity assessment. Based on the assessment, customer would get a better understanding of the compared alternatives for the packaging from the environmental impact and regulation point of view. EPR fee calculations could be used as a base for financial argumentation for the needed investments throughout the value chain. On the other hand, environmental impact calculations support customer's more sustainable packaging material choice. This would then ideally result in more sustainable packaging in the market and then support customer's success due to more eco conscious consumers whose buying decision are influenced by the ecological aspects of the product and the packaging.

**RQ2:** *How can a tailored sustainability service portfolio contribute to a paper board manufacturer's regenerative business model and create customer value?*

As discussed earlier, sustainability is one important element affecting packaging development of the customers and interviewees mentioned that it is hard to justify packaging development projects if they lead to wrong direction with sustainability targets. Case company's primary way to lower carbon emissions is to do that through action in its own operations and with partners in its value chain. Based on the interviews, customers named emission reduction as one of the key focus areas related to packaging development. In this area the case company is aligned with customers' needs by focusing on emission reduction of the supplied packaging materials. To make sure that the case company is aligned with customer, collaboration and discussion together with the customer related to sustainability is important. Sustainability services can support in this collaboration work.

Based on the interviews, the other focus area of interviewed companies in packaging development is circularity. Big part of packaging material portfolio of the case company is already technically recyclable but the availability of recycling infrastructure in the target market area can be difficult to find. This area is under investigation in the case company as without the relevant infrastructure the packaging material end up not to be recycled at all. The case company has also established collaborations together with its customers in the area of recycling.

Although recycling infrastructure is not everywhere available, it is still important to continue working around the packaging materials to ensure that the customer packaging is recyclable or even compostable. This can be done together in joint packaging development projects and through active discussions. Circularity assessment can support in comparing alternative packaging solutions from different aspects of sustainability and help to decide the best solution forward.

Based on the analysis of case company's sustainability approach, the case company is taking steps towards regenerative business model. Still one can identify also features from the other environmental approaches described by Hellström (2023). As described in this chapter the case company is working together with its customers and institutions to move forward in the journey towards regenerative business model. It is crucial to recognize that to succeed in achieving the ambitious sustainability goals in B2B environment, collaboration between companies is truly needed. This was also highlighted in the studies of Tandon et al. (2024)

and Hecker and Toivonen (2024). Without the commitment from the whole value chain sustainability transition cannot be executed.

By supporting customers with training services, the case company can support customers' packaging development towards more sustainable solutions that are in line with the packaging regulation requirements. Sustainable and relevant packaging development can support customers' sustainability related targets and the success of the customer company. Finally, this development towards more sustainable solution would also support case company's journey towards its sustainability targets. Hence, by supporting the customers with sustainability services the case company supports itself with the sustainability targets which are clear KPI's that also guides the journey towards more regenerative business.

As described both by one of the interviewees and Uldrich (2021), the rights of nature may have an impact on the license to do business in the future. This summarizes the importance of sustainability work done in different forms both internally in the case company and especially together with its customers. Finally, the most important value of the company is to be successful in the market in their respective field of business.

#### **6.4 Recommendations and future research**

This research and the results are mainly focusing on the case company's sustainability service portfolio. Still, as the thesis is focusing on the sustainability transition in the packaging industry this research can be also beneficial for other companies in the packaging industry.

As a recommendation for the development of the sustainability service portfolio, it would be important to focus especially on knowledge sharing in different forms. Interviewed customers saw clear benefits and needs in this area that would support their sustainability agenda in different forms. Thorough discussions with customers on sustainability in different forms and collaborative packaging development projects towards more sustainable packaging solutions would bring value for both the case company and customers.

One interviewee raised up the idea the broaden the service portfolio towards other packaging materials, such as plastic or metal, and also focus more outside European market. Based on the interviewee, more widened view on packaging materials would increase the interest towards service portfolio. This would be also something that interviewee thinks cannot be found in the market at the moment. This idea could be something for the case company to consider although the core material expertise is on the paper board material currently.

Other development idea raised during interview was to focus more outside the European market. Interviewee saw the case company as highly European market focused and recommended to look more outside the Europe. Biggest part of case company's packaging material sales is currently in Europe which can explain the focus towards this market area. Also packaging regulation is heavily evolving especially in Europe at the moment. On the other hand, the case company is global and present also on other market areas. It would be good to evaluate if there would be possibilities to look more outside Europe when developing the sustainability services forwards.

Interviewees saw the case company as a good partner in sustainability. Still, in one of the interviews, customer raised up that the case company is not stepping up in the media compared to competition in packaging industry. Many raised up that they would like to see more webinars and case studies from the case company. Although, the case company has been hosting webinars on sustainability topics it has not been noticed by the interviewed customers. Hence, it would be important to look into the way these webinars and also the sustainability related collaborations with institutes and other partners are marketed by the case company. It would be also good to consider if the case company could be even more active with webinars in the area of sustainability.

As a recommendation for the future research on this area in the case company, would be to expand the group of interviewees to confirm the results of this thesis. This can be done by continuing interviews or then this could be done via customer surveys that are conducted regularly by the case company. Via customer surveys the reached audience compared to the time used would be multiple times higher than by conducting one on one interviews.

The results and the interview questions from this thesis could be used as a basis for the questions in the customer survey. In this way the results would be more comparable to each other. Of course, it is important to recognize that with the survey it is not possible to ask follow-up questions the same way as in the live interview but on the other hand also the handprint of the interviewer is not affecting customer answers as it might in the qualitative interviews.

It would be interesting to first confirm the results of this thesis by using the customer survey approach and then next time deep dive more on the specific topics. This could be related for example to the commercial side related to sustainability service portfolio as it was not the focus area in this thesis. As customers are already expecting a lot of collaboration from its

suppliers related to sustainability, it would be interesting to deep dive even more how much support is expected due to the supplier status of the case company and which services are seen to be more than that. When looking more on the expectation, it would be also interesting to create more understanding how case company's sustainability services compare to the competition. This would help to understand more how the services should be developed further.

## 7. CONCLUSIONS

In recent years, there have been an increasing understanding that only sustaining the Earth system is not enough, but also regenerating the planet's ability to meet human needs today and in the future is needed (Konietzko, Das, et al., 2023). To put it simply, companies should aim towards net positive impact to the Earth system which means that the environmental handprint of the business is bigger than the footprint (Hellström, 2023).

This master thesis investigated how the paper board manufacturer could support its customers with their sustainability needs regarding packaging solutions. More specifically, thesis is focusing on understanding how tailored sustainability services can provide value for customers and support case company's road towards regenerative products and solutions company. To deepen this understanding thesis was focusing on what is meant by customer value and how it can be created.

Based on the literature analysis in the theoretical part, the case company is taking steps towards regenerative business model and there is roadmap built to reach the goal of providing 100% regenerative solutions in the future. There are still recognizable elements from other type of environmental approaches as well at the moment. Based on literature one can identify elements starting from exploitative towards restorative approach described by Hellström (2023).

It is crucial to recognize that to succeed in achieving the ambitious sustainability goals in B2B environment, collaboration between companies must be done. Without the commitment from the whole value chain sustainability transition cannot be executed. This was also highlighted in the studies of Tandon et al. (2024) and Hecker and Toivonen (2024). The case company has recognized this importance and is working together with its customers and institutions to move forward in the journey towards regenerative business model.

Especially two services from case company's newly launched service portfolio were identified to support customer's sustainability work, training services and circularity assessment. Interviewees had recognized lack of knowledge in their companies related to renewable packaging materials. As the packaging industry is used to be using plastics it is important to educate customers and consumers of the renewable packaging materials performance and environmental benefits. There are many ways for packaging material producer to share this knowledge to its customers. The current training services of the sustainability service port-

folio that the case company offers are one way to support customer in this area. To complement the current offering interviewed customers were interested to hear more case examples of packaging different packaging solutions from financial, regulatory and sustainability aspects in different markets and end use areas. This could be done by for example by sharing these cases in virtual training session dedicated to certain customer or then by webinar for larger audiences.

Due to the recent and upcoming, still not fully clear, packaging related regulation, the market has gotten more complex and vaguer. This causes uncertainty to the packaging development and increases the risk of being “the first mover” with innovative and more sustainable solutions. Educating customers on the packaging materials’ sustainability is a channel to support customers’ packaging development towards more sustainable packaging solution. By active discussion on sustainability and its relation to packaging development also the case company learn proactively from its customers on their needs and requirements.

To support the decisions to invest in sustainable packaging and the long resource intensive packaging development process, circularity assessments could be used as a tool to compare both the environmental emissions and the regulatory related EPR fees between different packaging materials. One of the challenges recognized related to sustainability transition was the justification of investments with only sustainability arguments. Comparison of different solutions from financial view as well support the decision-making process between different packaging solutions.

Based on this thesis, sustainability thinking is seen as a crucial part of business environment. Customers are having ambitious sustainability strategies and are expecting their partners’ support in their sustainability work. As mentioned throughout this work, collaborative approach in packaging development and sustainability work with customers is a key to be successful in transition towards more sustainable packaging solutions. Proactive development work in the area of sustainability, such as sustainability services, can be a way to differentiate from the competition and increase the collaboration further with the customers. By developing the sustainability service portfolio and its marketing further there is a good chance for the case company to support its strategy towards regenerative business further by promoting and offering the service portfolio to its customers.

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