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Master's Degree in International Business and Trade

Sustainability implementation within the value chain using
continuous improvement

- *A case study of MNCs implementation of sustainability* -

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Abstract

The implementation of sustainability is closely connected to an MNC's value chain and continuous improvement. There are academic studies that address sustainability in relation to the value chain and studies that highlight the importance of continuous improvement when implementing sustainability. Still, not much attention has been directed towards the interconnection between the three concepts and there is a need for research that fully recognizes the relevance and interconnection between them. This study investigates how MNCs have implemented sustainability within their value chains using continuous improvement. The study was conducted using a multiple case study, analysing five MNCs. The result of this study shows fairly strong evidence that MNCs implement sustainability within their value chains using continuous improvement. The value chain has been considered through the steps of Value Chain Analysis, although not performed in order. This does not however seem to have been a major impediment since the outcome of analysing the value chain has still been to create sustainable value. Also, the MNCs integrate sustainability to some extent along the whole value chain. The result from analysing the value chain feeds into continuous improvement which is done at several levels within companies and monitored by some type of sustainability board at the top of the organisation. The PDCA-cycle facilitates consolidation of sustainable practices through standardization and quality improvement related to sustainability over time. The study contributes to the existing literature by investigating the interconnection between sustainability, value chain and continuous improvement.

Keywords: Sustainability, Triple Bottom Line, value chain, continuous improvement,

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Abbreviations

EVP- Executive Vice President

EU- European Union

FSC- Forest Stewardship Council

GVC- Global Value Chain

KPI- Key Performance Indicator

MNC- Multinational Corporation

NGOs- Non-Governmental Organisations

UN- United Nation

PDCA-cycle- Plan, Do, Check, Act cycle

PEFC- Programme for the Endorsement of Forest Certification

SDG- Sustainable Development Goals

SMEs- Small and Medium-sized Enterprises

TBL- Triple Bottom Line

VCA- Value Chain Analysis

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1. Introduction

The introduction addresses the identified problem and discussion. Firstly, a brief background of the areas of interest, namely value chains, sustainability and continuous improvement is given to the reader. Then follows a problem discussion where previous literature is reviewed and research gaps are identified. Subsequently, the purpose of the study and research question is presented.

1.1 Background

In the past decades, the structure of economic activity has changed significantly. Trade liberalization, technological advances and the rise of emerging economies have altered the way goods and services are produced (Del Prete et al., 2017), and enabled companies to operate in an international context (Kano, 2018; Strange & Humphrey, 2019). Production has gone from being performed geographically close to companies to spread out across the world, resulting in Global Value Chains (GVCs). In order to obtain long-term competitive advantages like low costs and increased efficiency, Multinational Corporations (MNCs) have spread out their value-creating activities required to produce and exchange goods across different nations, thereby creating GVCs (Borglund et al., 2012; Del Prete et al., 2017). Value is at the heart of every firm since the enterprise needs to capture and create value that customers are prepared to pay for, hence resulting in profit. Activities are performed and organized based on the prerequisite that they will deliver value for the firm and ultimately, either implicitly or explicitly, the end-customer (Teece, 2010). Thus, the configuration of value, i.e. creation of a value chain, is an important necessity for companies to develop. The conceptual idea of a value chain illustrates a systematic approach to categorize primary and support activities performed by the firm that creates value (Porter, 1986). Primary activities are related to creating, producing and selling products and services, whereas secondary activities should support the primary ones, such as human resource management, finance or planning (Porter, 1986; Fearne et al., 2012). As production has gone from being performed geographically close to companies to spread out across the world, the interest for GVCs has increased (Del Prete et al., 2017). The activities performed have in recent years become object for scrutiny, which has led to a rising awareness of the environmental and social effects stemming from MNCs operations (Borglund et al., 2012; Mol, 2015).

Integrating environmental and social value along with economic value within a business has become an increasingly discussed topic (Bocken et al., 2013; Hart & Milstein, 2003; Sarmah et al., 2015). The long-lived truth that companies should only create economic value for shareholders has been challenged. Rising awareness among stakeholders of climate-change and social injustices have put pressure on business leaders and forced them to re-examine their activities. For example, IKEA is devoted to phase out all single-use plastic until 2020 (IKEA, 2020a), whereas many clothing brands have increased their sourcing of sustainable cotton as an answer to stakeholder demands for more environmentally and socially friendly practices (Textile Exchange, 2020). In August 2019 at the Business Roundtable, several CEOs from leading US companies acknowledged that the purpose of a company should be modernized and that more sustainable practices need to be adopted (Forbes, 2020). A survey made by Deloitte insights (2020) show that nearly 90 percent of more than 2000 asked global executives believe that climate change will to some extent negatively affect their organisations. Consequently, questions about sustainable development are becoming increasingly important and prompt organisations to consider how to devise sustainable solutions for the future (Rauter et al., 2015).

Committing to a more sustainable-oriented way of doing business entails to not only consider economic values, but also to integrate social and environmental values in strategic commitments towards stakeholders (Osiro & Carpinetti, 2018; Camilleri, 2017; Joyce & Paquin, 2016). The activities performed within a company should therefore strive to make profit without harming people or the environment (Cavagnaro, 2018). Joyce and Paquin (2016) illustrate the integration through a holistic approach where coherence between economic, environmental and social value can be vertically and horizontally integrated within a business and lead to more sustainable-oriented practices. In this study, the value chain refers to the primary and support activities performed by the MNC within the value chain since these are performed to create value (Porter, 1986) and is therefore assumed to be important when integrating social and environmental value as well.

Building on the notion of sustainability, value-creating activities performed by a firm should do no harm to the environment or society, implying that sustainability applies all along the value chain (Cavagnaro, 2018). Thus, sustainability requires that MNCs think about value in a new way (Whitfield & McNett, 2014). By understanding MNCs activities and identifying which areas within the business that are most important, the easier it is to identify where sustainable value can be created (Cavagnaro, 2018; Porter & Kramer, 2011). Not only will then social and

environmental value be created, but an MNC can gain the most economically and preserve the commitment to become sustainable over time (Porter & Kramer, 2011). Doing so rests on the premise that organisations can make a sustaining effort to align economic success with social and environmental practices in their value chain (Camilleri, 2017 s.89). Such an effort is not limited to certain MNCs but extends beyond a specific business.

Furthermore, sustainable issues and solutions exist in an international context that is complex and continuously changing. It is therefore only reasonable that the knowledge related to sustainability evolves as well (Whitfield & McNett, 2014, Bouchery, 2017; IUCN, 2018). Responsively, sustainability should not be viewed as a state, but merely a direction undertaken by MNCs (Bouchery, 2017; Silvestre, 2015). For companies, such a view implies a consistent need for reviewing and improving practices related to sustainability. Continuously looking for methods of improvement is usually coupled with the Plan, Do, Check, Act (PDCA)-cycle (Deming, 2000; Sokovic et al., 2009). The cycle highlights the need for ongoing improvement and has been widely used within continuous improvement (Sokovic et al., 2009).

Given the importance of the value chain and continuous improvement when implementing sustainability, the relationship between the three concepts would be interesting to investigate further.

1.2 Problem discussion

The acknowledgement that the concept of value chain ought to encompass a more holistic approach has become relevant in the last years. In this way, environmental and societal factors might convey new opportunities to create shared value, i.e. value that is beneficial for both the value chain and society (Porter & Kramer, 2011). However, the author's contribution has been subject to many academic criticism. For instance, Elkington (2012) discussed what Porter and Kramer stated on the benefits of shared value, explaining that it could impact negatively the environment eliminating key resources, such as altering climate or harming biodiversity, thus minimizing the concept of corporate sustainability to resource efficiency. Along the same line, Crane et al. (2014) suggested that Porter and Kramer's conception of shared value constricted negatively the role of a corporation in society. After these juxtaposed opinions, Porter and Kramer (2014) clarified their ideas behind the concept and meant that shared value cannot amend all the problems in society, and not all business impact it in a positive way.

Furthermore, there are some academic studies that address sustainability in relation to the value chain. Fearne et al. (2012) used a single case study to show how sustainability value chain analysis can be used to recognize misalignment between resource allocation and consumer preferences. However, the study was limited to a single product and specifically measured CO2 emissions along the value chain (ibid.). Kim and Kim (2016) focus on individual managers communication and the perceived idea of value chain sustainability in a single company. Balkau and Sonnemann (2010) make some contribution about the importance of sustainable management and performance of products along the value chain utilizing life-cycle management as a valuable tool. Although their approach is related only to environmental management, the case study model reveals the acknowledgement of sustainability issues as a central concern. In addition, government, communities and non-governmental organisations (NGOs) are important stakeholders in life-cycle management because of pressures in the commodity resource sector (ibid.).

Other authors like Bocken et al. (2013) go beyond the fact of incorporating sustainability within business and suggest value mapping as a mean of supporting them. By analysing six companies in a case study approach, the authors examine the usefulness of value mapping to create social, economic and environmental value. Three different types of value are discovered: captured, missed/destroyed or wasted, and opportunity. Moreover, four main stakeholders are identified: society, customers, environment and network actors. Another finding is that value mapping implements a multiple stakeholder view of value, instead of an intra-firm perspective (ibid.).

Several studies highlight the importance of continuous improvement when implementing sustainability and have developed frameworks building on the approach (Asif et al., 2010; Muñoz et al, 2013; Venkatraman & Nayak, 2010), whereas other authors focus on the “Do” part of the cycle (Pojasek, 2012). Three found studies investigate standards and managerial processes based on the PDCA cycle from the perspective of Small and Medium Enterprises (SMEs). Such enterprises are often constrained by their lack of resources when adding sustainability to the value chain (Verboven & Vanheck, 2015; Verboven, H. & Vanherck, L., 2016; Cassells et al., 2011; Neto, 2017). De Oliveira Santos et al. (2020) explored how service providing companies could develop their activities and minimize their impact on the

environment through an integration of the PDCA-cycle and a cleaner production methodology. Similarly, Silva et al. (2017) also focus on cleaner production, but within a beverage company.

Conclusively, there are academic studies that address sustainability in relation to the value chain (Fearne et al., 2012; Kim & Kim, 2016; Balkau & Sonnemann, 2010), and there are studies that highlight the importance of continuous improvement when implementing sustainability (Asif et al., 2010; Muñoz et al, 2013; Venkatraman & Nayak, 2010; Pojasek, 2012). Nevertheless, there seems to be a lack of studies that combine the three concepts and fully recognize the relevance and any interconnection between them. In order to grasp the wider aspect of sustainability and how it can be successfully integrated within an MNC should different concepts interconnection be examined. Given the importance of identifying where value can be created within the value chain and continuous improvement when implementing sustainability, the relationship between the concepts would be interesting to investigate further. A research gap has thereby been identified and will work as a basis for this study. The authors believe that by integrating and examining the three concepts in a research study, the possible outcomes could complement the existing academic literature related to the topics. Moreover, the findings could provide deeper insight on how and why MNCs started to implement sustainability in the first place, and the role of the value chain and continuous improvement when doing so. The study may also entail practical implications for managers and teams implementing sustainability. MNCs from several industries are included: paper and packaging; retail; food processing; transport; and steel. Looking at MNCs in different industries would allow for comparison and lead to an increased understanding of similarities and differences stretching above industry borders.

1.3 Purpose of study

The purpose of this study is to gain an increased understanding of how MNCs implement sustainability within their value chains using continuous improvement. The authors believe that by conducting a multiple case study where five MNCs are analysed can a deeper understanding of any interconnection between the three concepts, value chain, continuous improvement and sustainability be reached.

1.4 Research question

Based on the background and problem discussion, the following research question has been formulated:

How do MNCs implement sustainability within their value chains using continuous improvement?

1.5 Delimitations

In this paper, a broader approach of implementing sustainability will be taken, referring to the whole process of improving sustainable practices over time within the value chain. Thus, more operational features of such implementations will not be investigated, allowing the authors to compare MNCs from different industries. Also, a broader approach permits the authors to consider the notion of sustainability as a whole, i.e. include economic, environmental and social value. The value chain refers to the primary and support activities performed by the MNC within the value chain since these are performed to create value and therefore are important when integrating social and environmental value as well.

1.6 Structure of the thesis

The thesis consists of six chapters that are explained more in detail below:

Introduction

The chapter will introduce the relevant subjects of sustainability, value chain and continuous improvement. A problem discussion will then be presented, where a research gap is identified which the purpose of the study will be built upon. In the end will purpose of study, research question and delimitations be presented.

Methodology

The methodology will in depth describe methodological approaches taken in the study. Areas such research approach, data collection, quality of research and ethical considerations will be outlined and explained.

Theoretical framework

Here, the three relevant theoretical themes of sustainability, value chain and continuous improvement will be explained. The theoretical framework also works as a base for the conceptual framework that helps the authors to answer the research question.

Empirical findings

This chapter will present the empirical findings derived from interviews done with five MNCs. Every section connected to one of the MNCs start with an introduction to then move on to answers connected to the three relevant theoretical themes, sustainability, value chain and continuous improvement.

Analysis

This chapter analyses and discusses the empirical findings based on the theoretical framework. Firstly, sustainability will be discussed, followed by the use of the value chain and continuous improvement.

Conclusion

In the end of the thesis is a conclusion made based on the analysis. Also, the conceptual framework is revised to better suit the reality described in empirical findings. Lastly will managerial implications and future research be outlined.

A reference list and appendix are available at the end.

2. Methodology

This chapter aims to explain the methodology approach of this study and how it has been conducted. Choices connected to research design, multiple case study, data collection, and assessment of study will be motivated.

2.1 Qualitative research and approach

The paper will take the form of a qualitative research study. Qualitative research is distinguished by the potential to capture the participants views and perspectives. Thus, the ideas and frameworks developed by researchers can mirror the meaning of real-life events by the people who live them and not the researchers' point of view. As an extent, a qualitative approach goes beyond the task of only capturing events and people in real-life but also tries to explain them. Therefore, insights about existing or emerging concepts can be reached and further develop understandings of human behaviour (Yin, 2015, Bryman & Bell, 2015). This study will investigate how MNCs implement sustainability within their value chains using continuous improvement, suggesting that it is real-life events that will be investigated. Conclusively, the authors decided that a qualitative approach was most suited for the study.

Moreover, qualitative researchers try to prevent inflicting a predetermined format on the social world, due to the preference for seeing through the eyes of the people being studied. Consequently, a loosely structured approach when collecting data is usually preferred since it reduces the risk of a predetermined frame or reference on people and admits a higher degree of flexibility compared to quantitative research. Highly specific research questions are not required in advance but allow for specification after the collection of data (Bryman & Bell, 2015). Due to the flexible nature of qualitative research, the approach seemed best suited for our study since it allowed us to start working from a purpose, and not a specific, narrow research question. Although the direction of a study is given, qualitative research allows for a flexible research question, thus allowing us to change the composing of the thesis. To some extent, the research process, i.e. how we study, is also flexible and allows for modification along the way. Doing so would be much harder if a quantitative study had been conducted.

This study has taken an abductive research approach, which is a combination of inductive and deductive approach. Bryman and Bell (2015) mean that an abductive approach entails researchers moving back and forth between empirical findings and theoretical framework in an

attempt to adapt the latter and select the “best” possible explanation of collected data. Abduction considers the obstacles related to both inductive and deductive reasoning. Inductive reasoning has been subject to criticism since no empirical data will necessarily be enough to enable theory-building. The criticism related to deductive reasoning is that it is built upon theory-testing and falsifying hypotheses, but uncertainty related to which theory that should be tested prevails (ibid.). As researchers, it is important to consider that data might lead to new factors or circumstances that requires theoretical adjustments. An abductive approach therefore seemed suitable for the study, since it allowed us to go back and forth between theory and empirical findings, revising and changing where needed to. Such an approach also allowed for a gradual evolvement of a theoretical framework relevant to our findings. In the beginning, an extensive literature review was carried out to deductively identify a research gap within the theoretical fields of sustainability and the value chain. Still, as the empirical findings started to evolve did it become evident that continuous improvement was an important factor to consider as well. The authors therefore went back to the theoretical framework and added relevant information. Doing so is in line with Dubois and Gadde (2002), who view the abductive approach as a process of systematic combining, where “*theoretical framework, empirical fieldwork, and case analysis evolve simultaneously*” (ibid., p. 554).

2.2 Case study

Given the nature of this study, a multiple case study with a comparative design was chosen. Case study involves a business research based on an organisation, location, person or an event focusing on a thorough analysis of specific features. A case study type can take the form of a multiple-case study when more than one case is studied. A multiple case study is considered within comparative design since the purpose of it is to compare the included cases. The reasoning behind comparison allows the researchers to better study a social phenomenon when they juxtapose different cases (Bryman & Bell 2015). In this case, the comparison of five MNCs led us to examine how continuous improvement is used to implement sustainability within the value chain. If any similarities or differences are found in the empirical findings of multiple cases, authors usually feel more comfortable drawing generalising conclusions than if only a single-case study has been performed (Yin, 2015). Thus, we believe that conducting a multiple-case study could provide a deeper understanding of how MNCs in different industries work and

what features they have in common. Upon this, our findings are based on primary data and secondary data, further specified in *2.4 Data collection*.

Another important feature the authors of this study thought relevant when conducting a multiple-case study with comparative design was the fact that the examination of several cases enhances consideration of the findings, from a theoretical point of view. Bryman and Bell (2015) mean that multiple-case studies allow theory building, in a way that it enables the researchers to determine whether theory is consistent with the given circumstances by using comparison. Additionally, the possibility to compare cases can encourage the creation of relevant theoretical features (ibid.).

Thus, choosing a multiple-case study with comparative design allowed the authors to not only answer the research question “*how do MNCs implement sustainability within their value chains using continuous improvement?*”, but also to compare the several cases involved. We hope that doing so will lead to insight about how different MNCs implement sustainability.

2.3 Selection of companies- MNCs

This study is limited to the study of MNCs. A single definition of an MNC does not seem to exist in the international business literature (Aggarwal et al., 2011), thus allowing researchers to define it themselves. A reasonable criterion can still be derived from Kogut (2001), who defines an MNC as “*a business organisation whose activities are located in more than two countries*” (ibid., p. 10197). Coherently, the European Union (EU) defines an MNC as an international corporation with the headquarter usually in one country, whilst operating in other countries as well (European Commission, 2019). This paper has therefore chosen MNCs with a global spread, meaning that sales and other value creating activities are carried out on multiple continents. In addition, MNCs that fit the criteria of large companies from Bolagsverket, the Swedish companies’ registration office, has been chosen. Large companies are those with more than 50 employees on average, more than 40 million SEK in assets per year, and more than 80 million SEK in net sales per year (Bolagsverket, 2019).

As illustrated in Table 1, the MNCs presented in this paper are not limited to a certain industry. Given the research question and the choice to adopt a broader approach to implementation of

sustainability, it was concluded that the companies did not need to belong to the same industry. Instead, having a broad sample of different MNCs would result in a contribution more susceptible to the drawing of generalizations.

Name	Industry	Global Spread	Net sales/Turnover	Employees
Stora Enso	Paper and packaging	30 + countries	10.1 bn EUR (2019)	26,000
Ikea	Retail	38 countries	41.3 bn EUR (2019)	211,000 +
Tetra Pak	Food processing and packaging solutions	160 + countries	11.2 bn EUR (2019)	26,000
Volvo Buses	Transport	85 + countries	2.9 m EUR (2019)	8,000 +
SSAB	Steel	50 + countries	7.0 bn EUR (2019)	14,000 +

Table 1: Summary of companies compiled by authors

There are some constraints that need to be considered when undertaking a study. Researchers need to deal with time and resource constraints, hence make sure that the scope of the research falls within a certain deadline and budget (Yin, 2015). The above-mentioned criteria were regarded when looking for a sufficient research sample. Initially, MNCs operating in Europe were contacted. Because of the close geographical proximity, it seemed economically feasible that the authors of the study would be able to visit offices located outside of Sweden. For reasons that will be further explained under *2.4.1.2 Semi-structured interviews*, this turned out to not be possible. The MNCs participating in the study are: Stora Enso, IKEA, Tetra Pak, Volvo Buses and SSAB. There are several reasons behind selecting these companies. Firstly, all these companies implement sustainability at a relatively global stage (Volvo Group, 2019; IKEA, 2019b; SSAB, 2019; Stora Enso, 2019, Tetra Pak, 2019). Secondly, all of them comply with at least three of the Sustainable Development Goals (SDG) proposed by the United Nations (UN), which design common schemes that promote peace and prosperity for the people and the planet. These goals have been adopted by all UN Member States and can therefore also be considered important for MNCs implementing sustainability. In this case, the three common complied goals are (*SDG 15*) *Life on land*, (*SDG 13*) *Climate Action* and (*SDG 12*) *Responsible consumption and production* (UN, n.d).

Additionally, the authors want to clarify that Volvo Buses is the only company that does not comply entirely with the criteria established by the authors based on Bolagsverket, more specifically its turnover. However, Volvo Buses belongs to Volvo Group, which complies with the named criteria. Besides, both companies follow the same Sustainability Agenda as well as

consolidate sustainable activities under the same Annual Report (Volvo Group, 2019). Hence, it is still viable to include Volvo Buses in the research study.

2.4 Data collection

A variety of sources can be used as evidence in qualitative research. Such sources can be interviews, field studies or documents, enabling researchers to cross-check findings by the use of triangulation (Yin, 2015; Bryman & Bell, 2015). Triangulation refer to the use of multiple methods to test the validity of a source and helps the researcher to develop a comprehensive understanding of the subject being investigated (Carter et al., 2014). This paper will foremost use primary sources in the form of interviews, and secondary sources such as documents and sustainability reports.

2.4.1 Primary data

Merriam (1998) emphasizes that a source should always be valued based on whether it contains information or insights relevant for the particular study. Since this study aimed to examine how MNCs implement sustainability within their value chains using continuous improvement, it seemed reasonable to use data that would offer an internal perspective. By talking to people that works daily with sustainability for the MNCs, we were able to get a more insightful perspective than only using secondary sources. Hence, primary data was collected in the form of interviews. Doing so allowed the authors access to primary data without the involvement or filtration from anyone else but the respondent. Also, the respondent might share things that were not explicitly asked by the interviewer, but that may nonetheless prove valuable for the study. Follow-up questions can then be asked to enable further elaboration on relevant topics. Using only secondary data in the forms of public documents could pose a risk by not offering information in a form that is useful for the study, whereas primary data in the form of interviews allows us to ask specific questions to extract the right information.

2.4.1.1 Choosing interview respondents

Based on the theme of the study, it was concluded that managers or directors working with sustainability would be of most relevance to interview. Preferably, the respondents would also have several years of experience related to sustainability to increase their credibility. Thus, almost all respondents participating in this study work with sustainability within one of the studied MNCs. Employees at different companies were contacted but the ones in the study was chosen based on their knowledge and position. Kenneth Collander was chosen because of 20

years accumulated knowledge related to sustainability at Stora Enso. Erik Lindroth has a deep understanding of sustainability and its challenges based on experience from various implemented sustainable initiatives, resulting from 25 years at Tetra Pak. Caroline Reid within IKEA has worked extensively within Range & Supply and were able to give a more in depth understanding of IKEA's supply chain in relation to sustainability. Stefan Widlund from Volvo Buses is a Mobility Director with a cross-functional role and he often works with sustainability. Thomas Hörnfeldt has worked at SSAB since 2011 and has had strategic roles in the company such as Business Area Manager, Market Intelligence and Business Development until he was named Vice President of Sustainability and Public Affairs. Table 2 below presents information about the respondents and interviews held.

Company	Name	Position	Date	Type of interview	Length (min)
Stora Enso	Kenneth Collander	Head of environmental affairs	2/4	Skype	45
Ikea	Caroline Reid	Sustainability development manager	15/4	Skype	45
Tetra Pak	Erik Lindroth	Environmental director	15/4	Skype	60
Volvo Buses	Stefan Widlund	City mobility director	21/4	Phone	45
SSAB	Thomas Hörnfeldt	Vice President of Sustainability and Public Affairs	5/5	Phone	40

Table 2: Overview of interviews compiled by authors

A considered limitation is to solely have one respondent from each MNC. There is a risk that the respondents' personal views might colour his or her answers. Through triangulation using other respondents' answers as validation can such a risk be mitigated (Bryman & Bell, 2015). In this study, respondents' answers were therefore cross-referenced with secondary data to assure accuracy.

In the beginning of this study, multiple employees were contacted at each company with the aim to have more than one respondent from each company. Unfortunately many were not available or simply did not respond when we reached out. A few that were supposed to participate in the beginning found themselves too busy because of external circumstances which

is explained further in 2.4.1.2 *Semi-structured interviews*. The disadvantage of only having one respondent per company has been mitigated by choosing employees who has worked with sustainability within the companies for a long time and thus can be expected to have quite a lot of experience about implementing sustainability within a specific MNC. All participants within the study except Stefan Widlund have worked within the area of sustainability for more than ten years, which gives them a high level of knowledge within the chosen subject. We chose to still include Stefan Widlund who was the only one from Volvo responding to our invitations. Not including Volvo in the study seemed like a worse option than interviewing an employee working with sustainability even though it had only been for a couple of years. The participants from the MNCs possess a fairly high position within the company, some of them being head of environmental affairs or environmental director, and has therefore been able to participate and oversee various changes, processes and initiatives. Thus, it can be assumed that they possess a vast and broad level of knowledge related to that MNCs approach to sustainability.

2.4.1.2 Semi-structured interviews

Interviews are a common method used to collect empirical data within qualitative research (Bryman & Bell, 2015). Two different types of interviews were considered for this study: unstructured and semi-structured interview. The first is not an interview in the traditional sense, but more of a conversation where loose parts later are looked upon and tied together. The researcher might just ask one question and then let the conversation flow freely. The latter, a semi-structured interview, is guided by fairly specific questions but still offers the participant leeway when answering. The researcher might change the order of the prepared questions or ask spontaneous ones, all within the scope of picking up useful information (Bryman & Bell, 2015; Yin, 2015). Both types of interviews are of flexible kind, but based on the purpose of the study, semi-structured interviews were chosen. Hence, interview questions can be open and allow the researchers to ask follow-up questions to the respondent's answers. Doing so is in line with Merriam (1998) who means that semi-structured interviews enable the researcher to respond to the situation at hand and adjust the format to the respondent's worldview, thereby capturing new perspectives of the topic.

Eligible respondents were contacted by mail one month in advance, where the outlines of the research, the main objectives and the requiring information was detailed. If there was no respond to emails, phone calls were made. As mentioned before, managers or directors working with sustainability were contacted. After respondents had confirmed their participation, a

tentative date was settled in concordance with their schedule, prioritizing the importance of their participation. Whilst writing our thesis, the Covid-19 virus spread through the world, causing governments and public health agencies to take drastic measures to minimize the amount of people infected. People were encouraged to not socialize in groups, stay at home for at least two weeks if they felt the slightest sick (Public Health Agency of Sweden, 2020) and some countries even decided that whole communities would be quarantined (SR, 2020; SvD, 2020). As a result, many companies decided to let people work from home. It seemed feasible in the beginning of January to do interviews in person, but as the spreading of the Covid-19 virus intensified in March and April, this had to be reconsidered. Hence, it was decided that no interviews would be held in person to minimize the risk of infecting each other and were instead conducted over Skype or the phone. Also, no observations could be made due to this cause. An overview of the topics that would be discussed were sent one week before scheduled digital meetings, giving the respondents the possibility to contact us in advance in case of uncertainties. The authors are aware that conducting an interview over Skype or the phone instead of real-life can be a limitation. It is harder to create a genuine connection or to make the respondents feel comfortable. The authors were aware of the limitations and tried to overcome them by making the participants feel comfortable, hence more willing to share their thoughts.

Furthermore, conducting interviews requires researchers to consider their own capabilities and behaviour that could compromise the answers of the respondents. Kvale (1996) lists a few criteria of a successful interviewer. Among several, an interviewer should be: 1) knowledgeable about the topic of the interview; 2) structured, meaning that the interviewer steers the conversation in the right direction by asking relevant questions; 3) sensitive of respondents' answers by listening attentively and being empathetic when dealing with them (ibid.). The authors tried to consider the criteria by preparing for the interviews and gain a good understanding of each MNC and their sustainable development. Also, by preparing an interview guide we were able to more easily steer the conversation and extract as much useful information as possible. Considering this, the researchers proceeded to construct an interview guide that would result in the information needed to answer the research question "*how do MNCs implement sustainability within their value chains using continuous improvement?*". The guide was divided into three subjects: sustainability, the value chain and continuous improvement. Within these categories, both open and follow-up questions were formulated. Questions that could be answered by secondary data were slightly modified or eliminated in the questionnaire

to capture a deeper understanding or wider perspective of the asked subject. The interview guide can be found in Appendix 1.

2.4.1.3 Interview process

Throughout the interviews, the authors chose to ask open-ended questions constructed to capture the theoretical aspects of the study. Doing so allows the respondent to elaborate answers instead of limiting their response to a single word, which characterizes closed-ended questions (Yin, 2015). The respondents were therefore initially asked to talk about their own experiences related to sustainability within the specific MNC, and to elaborate how the way of working had evolved throughout the years. Yin (2015) emphasizes the need to ask good questions related to the study's theme when conducting interviews. Otherwise there is a risk of collecting vast amount of data that cannot be used within the study or even missing critical information in the process (ibid.). In order to avoid this, the authors of this study decided to divide the questions in segments, based on the three theoretical themes; sustainability, value chain and continuous improvement. When the interviews were held, some respondents spontaneously started talking about an experience related to a theme unrelated to the asked question. Follow-up questions were asked if the information seemed valuable to the study, and if not then the conversation was steered in the right direction. All conducted interviews were recorded, after permission had been granted from all participating respondents, allowing us to re-listen and analyse the recordings multiple times. Moreover, the interviews were transcribed, which is recommended by several authors (Bryman & Bell, 2015; Brod & Christensen, 2009; Oliver et al., 2005). Doing so allowed us to look for similarities and differences in the words used or relevant themes that could emerge.

2.4.2 Secondary data

Secondary data sources consisted of documents retrieved from the MNCs respective websites. There, information was derived about the companies and their sustainability work. The information allowed the authors to look for information related to the theoretical themes of the study and gain a deeper understanding of the companies before interviews were held. In addition, questions could be formulated that would allow respondents to elaborate on answers that had been found through secondary data sources. Thus, more in-depth interviews could be conducted. Secondary data sources such as each MNCs websites with historical facts and figures contributed to background information displayed in Table 1 under *2.3 Selection of companies-MNCs* and *4.0 Empirical findings*.

2.5 Data analysis

As referred to in section 2.1 *Qualitative research and approach*, this study took an abductive research approach, meaning that data assessment was performed simultaneously with theoretical input. Accordingly, the initial theoretical framework could be more adapted to the collected data and thus evolve simultaneously. Right after the interviews were performed, they were transcribed and sent to the participants for confirmation or modification. The data collected from interviews was combined with secondary sources and then divided into general information about sustainability, followed by the value chain and how continuous improvement is used. After the empirical findings, we proceeded with data analysis. Once the empirical findings had been written and revised by the respondents, a comparative analysis was performed, i.e. empirical findings of the different companies were studied from a theoretical perspective based on a conceptual framework created by the authors. In other words, the authors evaluated the companies' approach to sustainability as well as how they have used their value chains and continuous improvement to implement it. We also tried to search for themes and common words used by the respondents to see if there was a pattern in how they talked about sustainability, the value chain or continuous improvement. Lastly, a conclusion containing a revised conceptual framework was formulated based on the analysis.

2.5.1 Quality of research

The quality of the study is considered a relevant feature that contributes to a sound academic research (Shenton, 2004). Reliability and validity must therefore be taken into consideration throughout the study. However, such measures are not really appropriate in qualitative studies, as they are more adequate in quantitative research. More specifically, the assumption that they are applicable in only one specific social setting present constraints in qualitative research (Bryman & Bell, 2015). In order to maintain research quality in terms of believability and integrity, the measures reliability and validity have been adapted to better fit qualitative studies (Lincoln & Guba, 1985; Lincoln & Guba, 1994). These are trustworthiness and authenticity, where the former is divided into the following criteria: *credibility*, *transferability*, *dependability*, *conformability* (Bryman & Bell, 2015).

Credibility corresponds to the causal relationship between conclusion and variables of the research: In other words, the empirical findings should be consistent or in coherence with the

formulated research question (Bryman & Bell, 2015; Yin, 2015; Merriam, 1998). LeCompte & Goetz (1982) claim that credibility is the strength of qualitative research, which in fact provides trustworthiness to this type of study. Thus, researchers should consider the following recommendations (Shenton, 2004). Firstly, suitable research methods should be chosen (Yin, 1994). Secondly, researchers should become acquainted with the social and cultural context the companies selected are embedded in. This can be done through consultations or preliminary visits prior to data collection (Erlandson, 1993). In this case, we could not reach personal contact or do visits to the selected companies during the research study, which has been explained under *2.4.1.2 Semi-structured interviews*. Thirdly, researchers should use triangulation to ensure a sound data collection. Some individuals might experience difficulties at the interview process, which could undermine data collection. Therefore, it is recommended that researchers should turn to other tactics to verify if the information received is accurate, for instance with observation (Stake, 1994; Bryman & Bell, 2015). In this case, we did not plan to perform any type of observations. Instead, information from the respondents were verified through secondary data to the extent possible.

The second criterion is *transferability*, which within quantitative research can be identified as external validity. This feature involves the extent to which the outcomes of the research study can be applicable beyond the research context, in a way that they can be “generalized” under other situations or scenarios. Particularly in qualitative research, reduced sampling and case-study approach are common features that undermine transferability (Bryman & Bell, 2015; Yin, 2015; LeCompte & Goetz, 1982). However, Stake (1994) and Denscombe (1998) state that a case study may be representative of a broader group, thus its transferability cannot be completely discarded. Lincoln & Guba (1985) and Firestone (1993) affirm that it is the responsibility of researchers to provide appropriate and satisfactory contextual information to the reader in order to assure transferability. It is of relevance that they deliver additional information to the reader about the scope of the study, such as data of the sampling, constraints about data collection, people involved in the research study, data collection methods employed and sessions performed as well as its time frame (Bryman & Bell, 2015). The authors of this study believe that conducting a multiple case study will enhance and assure transferability to the reader. Since multiple MNCs from various business are participating in the study more

transferable then if MNCs within a single business had been investigated. Also, we have tried to provide contextual information to assure transferability.

The third component is *dependability*, which encompasses the possibility that the outcomes of a research can be repeatable. However, it is argued that repetition may occur due to the impossibility to hold an identical social situation or condition in time to evaluate repeatability (Le Compte & Goetz, 1982). Shenton (2004) state that reaching dependability is feasible if the procedures performed in the study are well specified like a thorough reporting of every activity performed by researchers. Such coverage would assure dependability and permit future researchers to develop likewise qualitative studies, if not necessarily to get identical outcomes (ibid.). The authors of this study have therefore tried to thoroughly outline the different choices and decisions taken to provide transparency to the study. Such information is stated throughout the methodology chapter and hopefully provides a solid explanation for all decisions.

Lastly, *Confirmability* constitutes ensuring objectivity in business research studies. It is argued however that such neutrality cannot be completely reached as all the activities derived from these studies are performed by humans, making eventual researchers' biases unavoidable. Researchers should not allow their personal values and theoretical preferences to disturb the research and the consequent empirical findings (Bryman & Bell, 2015). Therefore, the authors of this study have tried to avoid subjectivity within the present study to assure as much neutrality as possible. For instance, the interview guide was sent one week in advance to the respondents. Doing so allowed for corrections, modification and valuable opinions. Also, this action ensures professionalism and trustworthiness towards the respondents that have been selected for interviews (*see 2.6 Ethical considerations*).

Another important aspect is the criterion of authenticity, suggested by Lincoln & Guba (1985; 1994). Authenticity “*raises a wider set of issues concerning the wider political impact of research*” (Bryman & Bell, 2015, p. 403), and has to do with the relevance and impact of the research study in the social settings where it is conducted. Several aspects are considered, for instance fairness; ontological or educational authenticity; impact and importance of the research; and sensitivity of the context, (Bryman & Bell, 2015). The authors hope that by

investigating how MNCs implement sustainability within their value chain using continuous improvement, a deeper understanding of the three concepts can be reached and provide insights for MNCS. Furthermore, the outcomes of this research can hopefully serve as reference or guidance for other companies that are on the path towards implementing sustainability.

2.6 Ethical considerations

It is crucial to be aware of the ethical principles involved when conducting a study (Bryman & Bell, 2015). Researchers may find themselves faced with the dilemma of achieving a balance between protecting individuals participating in the study from harm or wrong and conducting good, qualitative research. Harm can be both physical and psychological, whereas wrong could refer to several situations. For example, not informing the participant in advance about the purpose of the study or deliberately deceive them is considered doing wrong (Swedish Research Council, 2019). In order to avoid any mistake, the participants should be properly informed about what the study examines, give their consent when using information extracted from them and feel comfortable during the interviews (Bryman & Bell, 2015; Swedish Research Council, 2019). Consequently, we made sure that everyone asked to participate in the study were well-aware of the purpose before agreeing to be interviewed. Also, the respondents were given the option to be anonymous before interviews were conducted. If a respondent is allowed to participate anonymously, the person in question might be more inclined to give unfiltered and more honest answers since he or she feels safer. The authors also made sure everyone was informed about what questions would be asked during the interview. Respondents were also given the option to decline when we asked to record the interviews. In conjunction with guidelines presented by the Swedish Research Council (2019), recordings were done in a respectful manner where the individual integrity of each participant was respected. Finally, the authors distributed a draft copy of the empirical findings, where each respondent was able to correct, approve or make valuable comments to the information collected.

3. Theoretical framework

The theoretical framework introduces relevant concepts and theories connected to the purpose of the study, such as sustainability, value chains and continuous improvement. The first chapter discusses sustainability and its different components. Since the concept of a Triple Bottom Line (TBL) is closely related to sustainability, will that to be explained more in depth. The second chapter, value chains, cover the activities performed along it and how a value chain analysis (VCA) is performed. The third chapter explains continuous improvement as well as the tool PDCA-cycle used when improving sustainable practices. As a conclusion of the chapter, a conceptual framework will be presented.

3.1 Sustainability within business

Sustainability is not a new concept. In 1987, sustainable development was first defined by the Brundtland commission as “Sustainability development meets the needs of the present without compromising the ability of future generations to meet their needs” (WCED, 1987). Since then, academic research and public interest have increased tremendously. However, likewise in practice, business research has mainly centred its attention on corporate efforts trying to develop specific capabilities that aim to achieve sustained competitive advantage or improve their economic performance (Laurell et al., 2019). Seemingly, Montabon et al. (2016) and Friedman (1970) state that corporate businesses prioritize economic aspects such as increasing profit for shareholders, leaving aside environmental and social aspects. Nevertheless, after some years, there has been a general acknowledgement that intensive natural resource use and scarce resource efficiency led to the integration of sustainability in business practices and consider sustainable development as a source of strategy (Schulte, 2013; Kleine and von Hauff, 2009). There is today a considerable amount of literature that discusses the topic of sustainability that incorporates both economic, environmental and social dimensions (Bocken et al., 2014). Above all, sustainability in business entails “*a company’s or an organisation’s economic, social and environmental efforts to implement and manage both its own and its business network’s impact on Earth’s life and ecosystems*” (Svensson and Wagner, 2015, p. 196). Elkington (1998) pointed out that the success of sustainability will not depend on a single company, but will rely on the progress of entire industries, value chains and economies. Along a similar line, the UN unanimously committed to the 2030 agenda for sustainable development in 2015 illustrating that sustainable development is a global matter (UN, 2019).

Present research focuses mainly on how sustainability influences corporate strategy (Whitfield & McNett, 2014), with several alternative definitions based on the Triple Bottom Line (TBL) approach (Pope et al., 2004). The TBL extend the traditional economic bottom line to focus on creating economic, environmental and social value (Bocken et al., 2014; Cavagnaro, 2018). Gimenez et al. (2012) state the TBL has reached worldwide recognition, or even being inherent, to the concept of sustainability. The TBL is constructed to capture the essence of sustainability by calculating the impact of corporate activities in the global settings that companies work in. Conclusively, one of the main principles of sustainability is that activities of a firm should do no harm to the environment nor the society. Instead, MNCs should strive to do good (Cavagnaro, 2011).

Sustainability dimension	Principle
Economic value, profit	Economic profit and financial health
Social value, people	Fair labor practices Human rights considered for all people involved in internal and external processes. Product responsibility Reduce community impact and try to do good
Environmental value , planet	Restore planet Earth capacity to support life Reduce waste Reduce energy use Improve air quality Improve water quality

Table 3: Overview of sustainability dimensions and principles (Cavagnaro, 2011; Whitfield & McNett, 2014)

According to Seuring and Muller (2008), companies set up environmental, social and economic goals as part of their overall strategic objectives. However, internal and external factors can affect reaching these goals, which underlines the need to identify and mitigate risks that might hamper reaching them (ibid.). External stakeholders are highly important within sustainability (Elkington, 1998, Hart & Milstein, 2003). Even though stakeholders may vary depending on the MNCs business are the following usually identified as stakeholders: customers; investors and shareholders; employees; suppliers and partners; NGOs and legislators (Bocken et al., 2013). All of them have increasingly gained relevance and power, influencing businesses and markets. Such power takes the form of a partnership or alliance with companies as a way to tackle sustainability problems from a microeconomic perspective. In a similar way, companies consider affiliation with stakeholders as an effective way to improve sustainability

performance. Hence, partnerships between corporations and stakeholders' results in a mutual beneficial tactic (Elkington, 1998).

Within the literature, MNCs are usually considered capable of implementing sustainable practices because of the benefits their large size contributes to (Baumann-Pauly et al., 2013). Contrary, many SMEs may experience time and resource limitations that undermine the process to incorporate sustainability in the value chain, since smaller companies might have a harder time allocating resources or people experienced within sustainability. Thus, it is commonly assumed that such constraints are dependent on the size of the company. However, there is not enough evidence to suggest that this dependence always applies (Baumann-Pauly et al., 2013; Udaysankar 2008).

To summarize, the extension of the bottom line means that a wider range of activities and stakeholders need to be considered. Accordingly, many companies have integrated a TBL approach in order to measure sustainability performance. In many ways TBL is a matter of balancing and combining several aspects. In the next section an outline of how to do this is suggested.

3.1.2 Underlying principles of TBL

To achieve balance of the components within the TBL, Venkatraman and Nayak (2010) mean that there are three underlying principles that companies should try to use: innovation, integration and interdependence. The three underlying principles can be used to prepare and facilitate for continuous improvement of sustainability in a well-structured and systematic way. Thus, the principles are present throughout the whole process of continuous improvement and enable MNCs to face risks efficiently and immediately (ibid.).

Innovation can help improve ideas and lead organisations to rethink processes and redesign products or services in a more sustainable manner. Improving and innovating processes could result in better environmental methods such as recycle, reuse of resources and eliminating waste in a more efficient way (Venkatraman & Nayak, 2010) Such a sustainable-oriented innovation is a way proven to work for organisations to create competitive advantages. Only adhering to the lowest possible environmental regulations might be tempting but could result in organisations being caught off guard when regulations become stricter. Also, since product development usually takes more than two years, progressing by fostering innovation before

stringent regulation comes into place enables organisations to gain a first-mover advantage (Nidumolu & Rangaswami, 2009). Medne and Lapina (2019) study how to interconnect sustainability with corporate strategy and measurement performance, suggesting that innovation processes are fundamental to continuous improvement. In this case, innovation can assist a company in adapting its internal measurement performance to the external environment (Ibid.). All in all, innovation can lead organisations to change corporate mindset and start thinking in a more eco-aware way, enabling them to proactively adopt a more holistic way of connecting environmental, social and economic values (Venkatraman & Nayak, 2010; Nidumolu & Rangaswami, 2009).

Integration, the second underlying principle, entails how systems and people are integrated to facilitate for social and environmental considerations along the whole supply chain. In a global competitive world, achieving incremental and transformational changes is hard. One successful strategy to adjust to technological changes has been the integration of systems, since it helps to achieve a more effective supply chain management. Likewise, engaging suppliers in systems and decisions related to sustainable matters can lead to greener supply chain systems and increased transparency. Han and Huo (2020) talk about green supply chain integration on social, economic and environmentally sustainable performance. They state that corporate green activities extend to supply chain by demanding green-related information regarding products and processes. So, companies are encouraged to respond to such demands and conform to certain sustainability requirements. Similarly, areas of improvements related to environmental and social issues can be identified along the whole value chain. Integration can thereby lead to more effective leadership and sustainable-oriented decision-making (Venkatraman & Nayak, 2010).

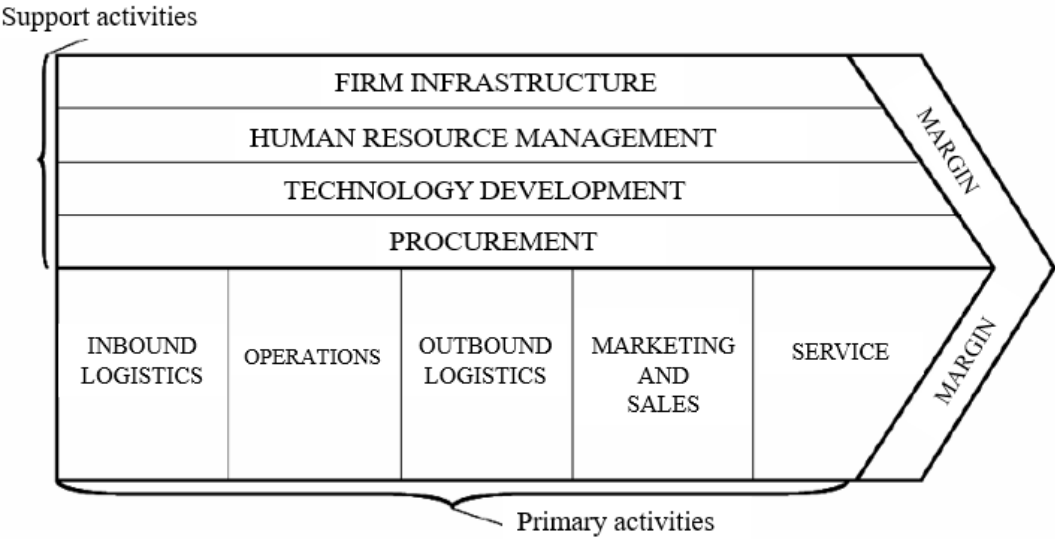
Interdependence, the third underlying principle, refers to that organisations are interdependent of each other. Natural resources are shared, and their activities impact each other in multiple ways, for instance ecological, organisational, political, economic, social and cultural (Starik & Rands, 1995; Venkatraman & Nayak, 2010). Interdependence can be cultivated through communicating with stakeholders allowing organisations to truly understand the social and environmental implications of their actions. In addition, government regulations and market mechanisms will presumably generate true costs for organisations, forcing them to adopt more sustainable-oriented budgets. To mitigate risks related to environmental, social and economic

areas, organisations should foster partnerships, shared knowledge and regulation compliance. All in all, interdependence can be strengthened through the notion of increased benefits (Venkatraman & Nayak, 2010).

To summarize the section about sustainability, main principles of the concept is that activities of a firm should do no harm to the environment nor the society. Instead, MNCs should strive to do good. The TBL is central within sustainability and extend the traditional economic bottom line to focus on creating economic, environmental and social value. The three underlying principles of the TBL, innovation, integration and interdependence can be used to prepare and facilitate the way for continuous improvement of sustainability in a well-structured and systematic way. Closely related to sustainability is the concept of value chains which follows in the next section.

3.2 Value Chains

As mentioned in the introduction, the conceptual idea of a value chain illustrates a systematic approach to categorize primary and support activities performed by the firm that creates value (Porter, 1986). As shown by the picture below, primary activities are related to create, produce and sell products and services, whereas secondary activities should support the primary ones, such as human resource management, finance or planning (Porter, 1986; Fearne et al., 2012). The margin is the value gained from the combined activities (Porter, 1986).



Picture 1: Value chain activities (Porter, 1986)

The concept of a GVC has been explained as a vertical fragmentation of the production process that is divided into several different stages. Parts and components are produced in different countries or regions and are then assembled in one final place or sequentially along the value chain (Liu et al., 2018). Doing so requires MNCs to some extent integrate its activities worldwide to capture the linkages among countries (Porter, 1986). GVCs is therefore important for MNCs and should be managed accordingly (Sausman et al., 2015). The Production networks in GVCs are highly complex and involves several stakeholders within logistics, manufacturing, assembling and custom services (Del Prete, 2017).

Furthermore, an MNC needs to consider the global context when making sustainable lasting environmental and social improvements in their worldwide value chain activities. Implementing sustainability in different countries will entail different contextual factors that could affect interpretation and compliance of regulations. Using standardized codes of ethics and procedures can help to mitigate such risks and reduce the uncertainty of a multidimensional context (Helin & Babri, 2015).

3.2.1 Value Chain Analysis

As mentioned before, creating value is a necessity that companies must do for survival (Porter, 1986; Teece, 2010), illustrating the importance of the value chain. Therefore, it is reasonable to assume that it is within the value chain that implementing sustainability will gain the most relevance and effect. To identify where such sustainable value can be created requires companies to perform a Value Chain Analysis (VCA).

VCA entails adopting a holistic perspective where economic, environmental and social perspectives are taken into consideration. VCA is a diagnostic tool companies can use to discover opportunities and challenges within the value chain to then evaluate the areas where most value can be created, thus create competitive advantage. Within those areas, companies will benefit the most economically and thus sustain its commitment over time (Porter & Kramer, 2011). Therefore, opportunities related to sustainability can be found and used to create shared value (Fearne et al., 2012; Porter and Kramer, 2011). Also, VCA helps guiding management decisions and recommendations in accordance with the direction of improvement (Howieson et al., 2016).

3.2.1.1 Three dimensions to ensure the creation of sustainable value

To ensure that sustainable value is created through VCA, three dimensions are important to consider: *scope of the value*, *limits of analysis of the value chain*, and *governance* (Fearne et al., 2012).

Scope of the value depicts the width of the sources and the beneficiaries of the value created (Fearne et al., 2012). Firstly, Shank and Govindarajan (1992) mean that created value is not limited to economic terms such as marginal between prices and costs. VCA should instead include activities or other possible sources of value that could lead to differentiation (ibid.). Thus, VCA can be extended to look at effectiveness instead of only focusing on efficiency (Fearne et al., 2012). Secondly, both the customer and consumer value are important. Customer value refers to upstream actors, market access and corporate activities that suits the customers' needs and expectations, thus taking a broader scope than just the end-consumer who eventually will use the product (ibid.). Consumer value represents the value created by the ultimate beneficiary of the product or service that the company offers. Understanding the consumer's behaviour is essential, although this might be insufficient to cover the scope of the value chain (Fearne et al., 2012). Instead, it is suggested by Holbrook (1999) to have a "collective" and "individual" scope of the interpretation of consumer value, so it can be extended to the society as a whole. Doing so could influence the competitiveness of the value chain or incorporate reputation through societal legitimacy (Bozeman, 1987; Hart, 1995; Bhaskaran et al., 2006; Hoffman and Woody, 2008).

The second dimension determines the *limits of the analysis of the value chain*. Instead of focusing on value creation at an intra-firm level and maintain a minimum level of dependency on suppliers and customers, an inter-firm outlook allows MNCs to consider the value chain as a system of multiple firms. They share information, skills and have aligned objectives to maximise effectiveness along the whole value chain (Fearne et al., 2012). Furthermore, an inter-firm outlook depicts that companies with extended supply chains, not only involving first-tier suppliers, are subject to scrutiny regarding their economic, environmental and societal impact. This means that several stakeholders such as governments, NGOs and consumers increasingly demand better performance throughout the whole supply chain, as they claim responsibility for the whole product lifecycle on an upstream level. Such requirements support companies towards a transparent and solid collaboration with all suppliers to meet such expectations (Seuring and Muller, 2008; Ciliberti et al., 2008; Berns et al., 2009).

Lastly, the third dimension encompasses *governance*, interpreted as “*authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain*”(Gereffi, 1994, p. 97). Although relationships have been considered to be useful in information or material flow can they also enhance the necessary collaboration to create competitiveness and innovation along the value chain, for instance building alliances. Consequently, relationships that create value can eventually lead to long-term competitive advantage as they represent a complex and valuable asset difficult to imitate or duplicate. In other words, relationships can encourage the creation of capabilities and resources that competitors do not have (Fearne et al., 2012).

3.2.1.2 The steps included in a value chain analysis

Considering these dimensions, there are quite a few approaches related to the steps companies should undertake when doing a VCA (Taylor, 2005; Francis, 2008; Bonney et al., 2009; Soosay et al., 2012), but generally, the following are included:

1. *Engage all members*: in order to ensure success, all members of a value chain should be involved and committed since this step determine how they interact throughout the VCA process (Taylor, 2005, 2006)
2. *Mapping the chain*: this step encompasses flow of products, information and relationships. Flow of products refer to mapping the physical flow of goods. Information flow involves transferring knowledge regarding the end-users preferences and demand back to producers where adjustments can be made. Relationship flows show how members within the chain are connected. If relationships are strong, communication is facilitated which helps to identify opportunities. If there is no trust or commitment between members, information flows will suffer and may lead to inefficient operations (Fearne, 2009; Bonney et al., 2009; Francis et al., 2008; Taylor, 2006).
3. *Recognizing opportunities and challenges*: Recognising opportunities and challenges along the value chain should help MNCs to make progress and improvements. For instance, it is important to identify if the quality of information that flows throughout the value chain is clear and comprehensive. Also, it should be identified to what extent stakeholders’ opinions are taken into consideration and how well the performance of the whole value chain is functioning (Fearne, 2009; Taylor, 2005).

To summarize the section about the value chain, the concept illustrates a systematic approach to categorize primary and support activities performed by the firm that creates value. The tool VCA reflects on three dimensions that ensures sustainable value creation. It encompasses *the scope of the value*, *limits on the analysis of the value chain* and *governance*. Moreover, some authors suggest gradual steps to undertake a VCA, namely *engaging all members* throughout the value chain, *mapping the chain* by considering material, information and relationship flows; and finally *recognizing opportunities and challenges* throughout the value chain. All in all, VCA assists MNCs to recognize opportunities and challenges within the value chain, and as an extent, evaluate where the most relevant and effective sustainable value can be created.

3.3 Continuous improvement

Sustainability exists in a complex and continuously changing context, thus knowledge related to sustainability need to evolve as well. For MNCs, such view implies a consistent need for continuous improvement related to sustainability. Continuous improvement is a constant, ongoing effort used by companies to improve quality related to products, services or activities over time (Stimec & Grima, 2019). Bessant and Francis (1999) defines the method as ‘*a particular bundle of routines which can help an organisation improve what it currently does*’ (p.1106), thus leading to improved quality over time.

3.3.1 PDCA-Cycle

Looking continuously for ways of improvement is often coupled with the PDCA-cycle Plan, Do, Check, Act (Deming, 2000; Sokovic et al., 2009). As mentioned before, the PDCA-cycle is an approach that involves continuously looking for improvements (Sokovic et al., 2009). Figure 1 below illustrates the different components of the PDCA-cycle.

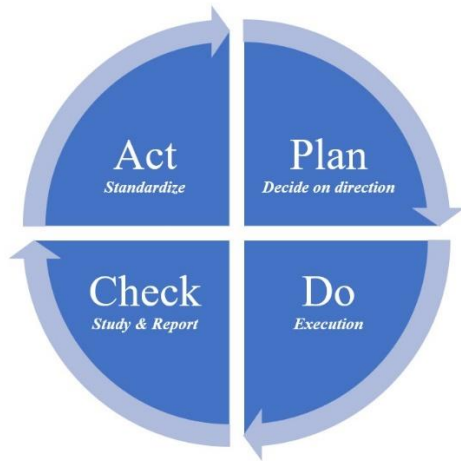


Figure 1: PDCA-cycle, compiled by the authors

According to Silva et al. (2017), PDCA is not merely a tool companies can use, but a philosophy that should be embedded within the organisational culture to fully function. Change should occur stepwise, bound by the following phases (ibid.):

1. PLAN: *Decide on direction*

The first phase encompasses the analysis of the current situation of the process, where possibilities for improvement as well as the challenges raised are identified. Therefore, it is necessary to design a sustainable-oriented plan to assure sustainability along the process, instead of establishing short-term or unplanned initiatives (Silva et. al. 2017; Verboven & Vanherck, 2015). Under this level, consistent data collection is assembled and some tools are suitable for setting a plan and problem identification. For instance are cause and effect-diagram, check sheets, Pareto diagram and histogram useful for problem identification (Silva et al., 2019; Sokovic et al., 2009)

2. DO: *Execution*

Once challenges and opportunities have been detected and considered in the design of sustainable initiatives, the second stage focuses on actually executing the plan. In order to later revise and learn from the process, data should be continuously collected. This stage usually entails the use of different tools such as Check sheet, Histogram and Control chart for data acquisition. However, all directives may not be able to be implemented all at once and therefore they need to be prioritized, outweighing between short- and long-term initiatives and the company's potential impact on the environment and society. Moreover, this stage also includes the establishment of Key Performance Indicators (KPIs) to measure sustainable performance,

as well as the incorporation of sustainable activities in day-to-day processes (Verboven & Vanherck, 2015).

3. CHECK: *Study & report*

At this stage of the cycle, the outcomes of the sustainable actions performed are thoroughly analysed. Substantially, the results are compared to the expected ones and a control over the improvements made and the goals met is performed. Tools such as Control charts, Cause-and-Effect diagram, Check sheet, Pareto diagram and Scatter plot are valuable to execute the analysis (Silva et al., 2019; Sokovic et al., 2009). Furthermore, the KPI's should assist such analysis and serve as an internal feedback. Many companies use an external part to validate their sustainable performance, which can increase a company's trustworthiness and transparency (Verboven & Vanherck, 2015).

4. ACT: *Standardize*

The last component of the cycle corresponds to the measures to undertake once the results of the sustainable initiatives have been analysed, as well as considering the improvements made (Verboven & Vanherck, 2015). At this stage, the actions with good results are standardized within the company. If some actions reach unsatisfactory results can they either be altered and tested through the cycle again or replaced by other new actions. Also, the company can consider repeating the process with new data collection, and thus design other new actions (Silva et. al. 2017; Verboven & Vanherck, 2015).

To summarize the section about continuous improvement, MNCs need to continuously improve practices related to sustainability to improve quality. The PDCA-cycle is often used as a tool within continuous improvement and include the four stages of Plan, Do, Check and Act.

3.4 Conceptual framework

In order to answer the research question, how do MNCs implement sustainability within their value chains using continuous improvement, a conceptual framework has been created. The framework draws upon the three important theoretical themes discussed earlier which has now been integrated to one model, namely sustainability, value chain and continuous improvement. These are presented in Figure 2, thus providing a holistic view of implementation of sustainability. The model rests on a few premises, which are presented more thoroughly below.

Firstly, it is assumed that MNCs consider sustainability as important and have the goal to increase their sustainability performance. If not, there would be little reason to study how they have implemented sustainability.

Secondly, the literature emphasizes the importance of creating value within areas with most potential (Porter & Kramer, 2011), and it is therefore assumed that such identification is done through VCA. The result of the VCA feeds into the cycle of continuous improvement and the PDCA-cycle. When a practice has been revised and is considered successful, it becomes standardized within the company.

Thirdly, the three underlying principles of the TBL, innovation, integration and interdependence are assumed to be considered by MNCs when implementing sustainability practices through continuous improvement. Thus, the principles are present throughout the whole feedback loop of continuous improvement. The principles are also important when trying to achieve a balance of the components within the TBL (Venkatraman & Nayak, 2010), thus further emphasizing them.

Conclusively, the conceptual model shows how implementation of sustainability is driven by analysing the value chain to identify opportunities and challenges, and then perform continuous improvement within relevant areas. When a practice has been revised and is considered successful, it becomes standardized within the organisation. The value chain is then analysed again, and the process continues. Thus, there is a constant interaction between the value chain and continuous improvement. By doing so, implementation of sustainability can be achieved and improved over time.

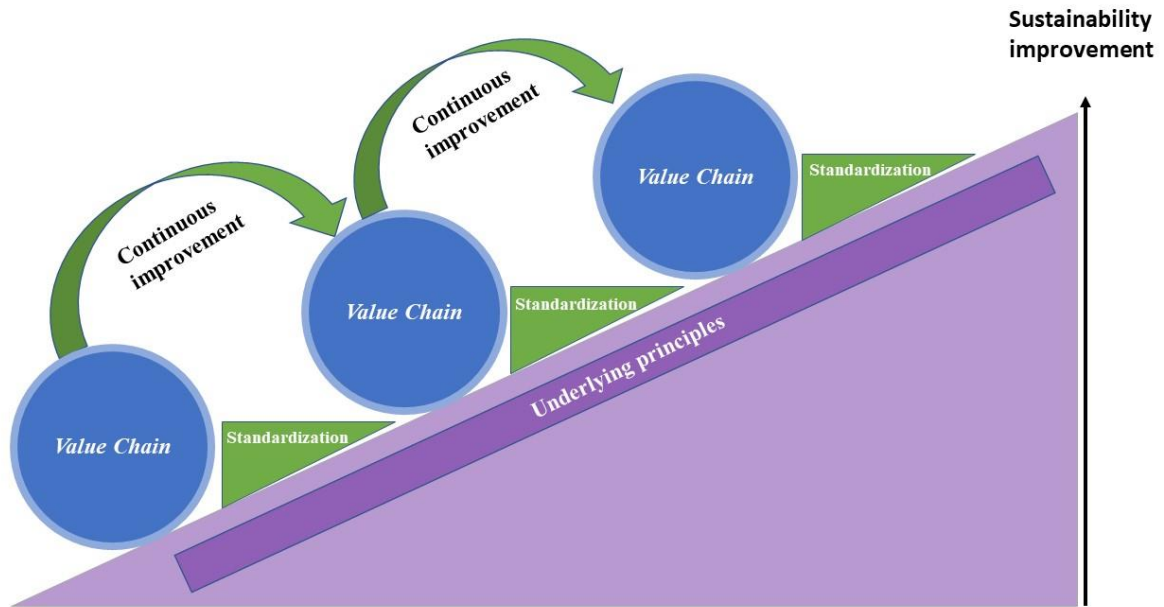


Figure 2: Conceptual model, compiled by authors

Appropriately, the first step will be to examine the MNCs approach to sustainability, to then move on to examine the value chain through VCA and continuous improvement through the PDCA-cycle. Then, how innovation, integration and interdependence have facilitated the use of continuous improvement will be examined.

4. Empirical findings

This chapter will present the empirical findings derived from primary and secondary sources for each company participating in the study. In the end, a summary of the empirical findings will be demonstrated.

4.1 Stora Enso

4.1.1 Introduction

Stora Enso is a renewable materials company formed in 1998 through the merger of the Finnish company Enso Oyj and the Swedish company Stora Kopparberg's Bergslags Aktiebolag (Stora). With roots dating back as far as 1300's, the company has been involved in many diverse operations, and has a long history of meeting business challenges. The first recorded Stora operations took place in 1288, mainly focusing on copper mining in Falun, and the business later progressed to become Stora Kopparberg's Bergslag in 1862. Leading up to the 1970's, Stora wanted to focus more on wood activities and the production of pulp and paper, which led the company to sell its mining and metal operations. The Enso part of the company was founded in 1872 in Kotka, Finland by setting up one of the first steam-powered sawmills in the country (Stora Enso, n.d a). Today, Stora Enso develops products such as formed fiber, bio-based chemicals, bio-based materials, packaging solutions, paper, market pulp and pellets (Stora Enso, n.d b). All products are based on wood and biomass for a wide range of industries and customers worldwide. With a clear strategy leading towards a circular economy, all products are developed to replace fossil-based materials, meaning that most raw materials are renewable, recyclable and fossil-free. Furthermore, Stora Enso employs approximately 26,000 people and production is carried out in parts of Europe, Russia, China, the United States, and South America. The company also owns 50% of Veracel Celulose pulp mill in Brazil and a joint operation of the Montes del Plata mill in Uruguay (Stora Enso, 2019).

The interview was conducted with Kenneth Collander, who works as head of environmental affairs in Falun. Mr Collander has worked with sustainability within the company for more than twenty years and directly reports to the Executive Vice President (EVP) Sustainability in the Group Leadership team.

4.1.2 Sustainability

Mr Collander states that sustainability has been an integrated part within Stora Enso for a long time and covers social, environmental and economic responsibilities. When he started over twenty years ago there was no clear systematic approach to sustainability as a whole concept. Rather, it was more seen like risk mitigation and compliance, continuously moving towards a way of looking at it as a competitive advantage. Gradually, Stora Enso was able to move the different pieces of the TBL closer to each other and build a holistic way of looking at sustainability, thus later identifying sustainability as key component in the core business.

Stora Enso's sustainability work is steered by a Sustainability Council, which includes members from the product divisions, the Sourcing and Logistics function, and subject matter experts from the Group Sustainability team. The Council is chaired by the EVP of Sustainability, and the work involves sharing good practices and identifying longer-term opportunities and challenges that may require a Group-wide response. The Group Leadership Team is periodically informed of specific sustainability developments, so is also the Board of Directors when appropriate, through its Sustainability and Ethics Committee. Stora Enso's heritage and long experience of renewable materials in the forestry industry has helped the company to consider sustainable development as a process of long-term development that changes regularly and continuously. Focusing more and more on renewable materials has led to a unique ability to adapt to the expectations from stakeholders in a sustainable manner.

“Last years we have been focusing more and more towards doing smart things with renewable sources and we also have a lot of forest holdings inside our company as a direct ownership as well. So we have a very unique ability to adapt to the expectations from society, from customers from the future as being a sustainable company.”

When asked about what important steps Stora Enso has undertaken to reach where they are today, Mr Collander says that sustainability reporting helped form the way forward to view sustainability as a competitive advantage. Also, he states that management skills were of great help.

“Clear leadership on highest management level was a prerequisite to start moving, as well as sustainability substance expertise connected to good leadership... Not to mention a

structured approach in all areas of our sustainability agenda and of course learning from the victories and crises we have experienced.”

4.1.3 Stora Enso’s value chain

Stora Enso tries to ensure environmental, social and economic responsibility throughout the value chain. Mr Collander mean that the three values stem from considering the TBL, which Stora Enso’s Sustainability Agenda is based on. When asked if familiar with VCA, he says that he knows what it is and that they have used it within the company when shaping Stora Enso’s sustainability work. The company focus on three agendas; a social, environmental and economic one. Within these agendas are several prioritized parts within the value chain: employees and wider workforce; community; business ethics; materials, water and energy; carbon dioxide; forests, plantations and land use; and suppliers. Nevertheless, he points out that all companies must prioritize and only have a limited amount of spending that they can use. The Sustainability Council, who includes members from all divisions are responsible for identifying long-term opportunities and challenges related to sustainability.

Listening to stakeholders and identifying what is important to them is something that is done in conjunction to VCA. Mr Collander mention numerous stakeholders, but especially emphasizes the importance to hold fluid interactions with industrial customers since their branch is defined by a Business to Business (B2B) modality. Overall, a close communication with stakeholders enables Stora Enso to have a proactive strategy that responds to trends in the world and customer demands. In addition, Mr Collander emphasizes that decisions related to sustainability is not just based on analysis and stakeholders, but also internal information related to the market and corresponding trends.

Moving into the external factors that influence the implementation of sustainability, Stora Enso depends on “*where the market is going*”. Certainly, they are influenced by the trends of the market, and not only stakeholders’ expectations and VCA analysis. Stora Enso’s Sustainability Report (2019) illustrates some external factors and global trends that affects their sustainable topics. For instance, UN Guiding Principles on Business and Human Rights as well as the Paris Agreement regarding global warming. Stora Enso is dedicated to comply with UNs guidelines regarding human rights and has signed a pledge that aims to tackle global warming by reducing CO2 emissions throughout the value chain (ibid.).

4.1.4 How Stora Enso uses continuous improvement

Mr Collander admits that continuous improvement is the way they have worked when implementing sustainability. He is familiar with the cycle of improvements, and that they have been using it since the 1990s. Regarding monitoring of sustainable practices, they are followed up by the Group sustainability team and at division-level business. More specifically, the report to the Group is performed quarterly and the SDGs are reported monthly. At a division-stage, the periods can vary from monthly to quarterly. After this stage, the results are merged and showed in the Sustainability Report.

Overall, Mr Collander explains that follow-up activities entail much pre-work and preparations. Some challenges are faced when reporting cross-related indicators as more measuring is required. Such an indicator can be water use. Mr Collander tells that the implementation of some sustainable initiatives depend very much on its target, since the six business divisions within the company handle different areas: packaging materials, packaging solutions, paper, wood products, biomaterials and forest. Thus, it is necessary that they focus on different things related to sustainability. Each division has their own Head of Sustainability and reports to the EVP of the division. Line managers within every division are responsible for making sure that the Sustainability Agenda is followed on a daily basis and reports back the results to the Head of Sustainability.

Continuous improvement is also present in Stora Enso's efforts to improve energy efficiency. By assessing the opportunities related to biomass residual streams and other low-carbon options have Stora Enso been able to easier identify where efforts should be focused. When such decision has been made, the results are monitored and evaluated to further improve activities (Stora Enso, 2019).

As for assessment of sustainable performance, the company has set up KPIs, and compare the results obtained with the expected ones. Furthermore, its assessment also incorporates the stakeholders' expectations and opinions. It is based on both structures and ad hoc interaction, as well as regular surveys (investor expectations, customer employee or employee satisfaction) and grievance channels. Social media is used as a bridge of communication (Stora Enso, 2019) Mr Collander highlights the importance of maintaining a fluid communication with customers,

as the company has the possibility to know if they are happy or satisfied. Customers satisfaction can vary from countries and unit divisions.

Nevertheless, assessment of sustainable performance has some exceptions. When asked if the joint operations in Brazil and Uruguay follow the same sustainability work, Mr Collander says no. The companies have their own sustainability teams, so the activities undertaken in Brazil (Veracel) and Uruguay (Montes del Plata) are not consolidated with Stora Enso's sustainable agenda. Veracel is certified through the Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) which are certifications that consider sustainable forest management, encompassing deforestation and biodiversity protection (Stora Enso, n.d c-d). Still, Stora Enso participates in board meetings where sustainability is frequently discussed.

Mr Collander further tells that all set targets and implemented actions are closely monitored by management teams. Suppliers are monitored and audited to ensure compliance and to help improve sustainability performance. He illustrates an example where the company might decide that waste from mills going to landfills should be reduced. If a mill does not comply with regulations and starts going in the opposite direction, then the management team will react and, if needed, follow up to ensure compliance. Lack of compliance can depend on various things such as a lack of managerial leadership skills or investments needed which they have not gotten neither from their division nor from the Group. It usually stems from a combination of factors. Mr Collander emphasizes that unsatisfactory results are taken very serious and actions are always taken when lack of compliance arises.

4. 2 IKEA

4.2.1 Introduction

IKEA is a company that offers functional furnishing at a low cost. The company was created in the 1940s by Ingvar Kamprad (IKEA, n.d), and has since then grown to become one of the most recognizable brands around the world with 313 stores in 38 countries/territories (IKEA, 2019a). Ready-to-assemble furnitures, kitchen appliances and home accessories are offered in wide ranges with a modernist design and low prices. The IKEA vision is to “*create a better everyday life for the many people*”, a commitment made possible by considering five dimensions: low

price, function, form, quality and sustainability (IKEA, 2020b). Creating a better everyday life includes a healthier, less wasteful and more sustainable way of living, which IKEA strives to incorporate in everything they do (IKEA, 2019b). Sustainability has been a part of IKEA for more than three decades, hiring the first environmental manager in 1989 (IKEA, 2010). Since then, IKEA has embarked on a journey to inspire and enable more people to live healthy and sustainable lives (IKEA, 2020c). Coherently, IKEA strives to be climate positive by 2030. In fact, 60% of IKEA's product range is made from renewable material, whereas 10 percent of the range contains recycled material (IKEA, 2020d). According to IKEA's latest sustainability report (2019b), material topics are the most important sustainability issues where the MNC has the ability to have an impact as a global furnishing business. Major challenges identified are: unsustainable consumption, climate change and inequality. The sustainability strategy has then been organised around efforts clustered in three focus areas: circular & climate positive, healthy and sustainable living, fair and equal (IKEA, 2019b).

The interview was conducted with Caroline Reid, a sustainability manager from England who has worked within the area of sustainability for 11 of the 14 years she has been employed within IKEA. Ms Reid has mostly been involved with sustainability along the supply chain but also to a small extent with product development.

4.2.2 Sustainability

Ms Reid tells that sustainability has for a very long time been important within IKEA. Such a view has been trickled down from the top and resulted in a general understanding of the importance of the concept. When asked about the importance of sustainability, Ms Reid answered *"This is something we shall work on, we must work on, we have a responsibility to work with, we have the possibility to make a big impact"*

Continuing, Ms Reid shares that the term sustainability was not used when she started working. Instead, many people referred to environmental and social dimensions without including the economic one. In the late 90's, considering the first two dimensions stemmed from a need to mitigate risks related to sourcing of raw materials and labour. As the realisation of needing to take responsibility grew, the economic dimension also became included, thus evolving into the use of the word sustainability. In order for IKEA to work with long-term sustainability, it needed to involve the economic dimension. When IKEA started seeing that there was many

possibilities to innovate and do things differently than competitors, the economic dimension seamlessly became included and sustainability evolved into a long-term commitment.

“Ingvar Kamprad, the founder of IKEA, used to say that “waste is a mortal sin”, referring to the need to be cost-efficient as a company but also resource efficient. Such a view emphasizes that it was built into the structure of the company”.

Moreover, when Ms Reid started working at IKEA, an important task was to go from sustainability being a complementary activity of all other business aspects to actually incorporate it across the business. Today, sustainability is a part of everyone’s role and is integrated in everything they do.

“I think that’s been the biggest movement and the most important point in really getting to where we are because you can’t do this with just a few sustainability people on the side.”

4.2.3 IKEA’s value chain

IKEA’s sustainability strategy, People & Planet Positive, is formulated from a total value-chain perspective and covers the whole value chain (IKEA, 2019b). Ms Reid tells that throughout the organisation are there people responsible to ensure sustainability is integrated along the value chain, all the way from raw material sourcing through suppliers, how products are designed and sold, to how customers are met. She further tells that the reason why IKEA has come so far on their sustainability journey as they have today is because of the ability to integrate sustainability into everyone and throughout the organisation whilst continuously asking where to prioritise and focus.

Through analysis of the value chain, stakeholder discussions and considering external factors, IKEA has been able to step-by step deal with opportunities and challenges. Such an example can be illustrated by the changes made towards renewable energy. Ms Reid describes how they have for a long time seen that energy generation from fossils have a negative impact and that IKEA can reduce its footprint in the world by addressing renewable energy. She further tells that the MNC not merely saw a way to increase the climate footprint, but also many business opportunities connected to it. Thus, renewable energy is often a win-win situation when one looks into it and that is why much effort has been focused there.

By analysing the climate footprint of every stage of the value chain, such as materials, production, transport etc, IKEA has been able to discover the portion and percentage of CO2 emissions at each step. Doing so has helped the company allocate resources and distribute efforts accordingly (IKEA, 2019b). Ms Reid elaborates upon the subject and says that sustainability is not fully incorporated along the value chain because of the long and complex supply chains, but that they are constantly striving towards it. She describes it as a step-by-step process where there is the need of being pragmatic because the processes are complex, and the company is very large. She illustrates an example of how IKEA has implemented their Code of Conduct for suppliers called IWAY. The company initially started with first-tier suppliers, i.e. those who are business partners and producing the IKEA products. When they have reached a satisfactory level of compliance can IKEA continue to further examine the suppliers upstream to identify the risks and most critical aspects. Big volumes of commodities also play an important role in where to focus efforts related to sustainable sourcing. Stakeholders both inside and outside the value chain are consulted to develop IWAY through an inclusive process.

Ms Reid goes on talking about the biggest challenges related to sustainable value creation and say that most challenges are not impossible to execute, rather it is the time aspect that often comes in the way. For example, innovation takes longer than two-three years and then integrating the ideas will also take time. For IKEA, who is defined as “*a low-cost company for the many people*”, finding sustainable materials that are also economic is a challenge sometimes that takes time.

“...we want also at the same time to be a low-cost company because we want to be available for the many people, we want to be able to really have this positive impact on many so it’s also that balance between, finding sustainable materials for example, it easy to find sustainable materials that are also expensive ... but materials which are both sustainable and low cost ... it’s definitely a challenge and an opportunity”

In the last years, IKEA has also made a substantial effort of going beyond the value chain and address a larger climate footprint than the IKEA value chain. LED-bulbs and other products used to produce renewable energy are offered to customers, and suppliers need to comply with sustainable standards to everything they do, not just the products produced for IKEA (IKEA, 2019b). Ms Reid tells that the company is currently on the journey to achieve 100% responsibly sourced wood, but they are not just doing it for themselves but also takes in the wider

perspective and tries to create responsibly sourced wood for other companies as well. A larger company has a bigger chance of creating impact than smaller purchasers, and IKEA therefore wanted to shoulder that responsibility.

4.2.4 How IKEA uses continuous improvement

IKEA uses a sustainability risk management process to identify, review and mitigate risks through a continuous cycle. Risks are identified and assessed in each market and then reviewed by a sustainability management team. Through a bottom-up method, risks are identified in each market, assessed and communicated upwards. Risk assessments are then performed by sustainability management teams to later be reviewed by the Sustainability Committee. The results are conveyed top-down to sustainability managers and the local risk assessment starts again.

“we have a saying in IKEA that nothing is better than a good example so I think that’s also been like “lets get some good sustainability examples” because if you have good examples you can create more momentum to do even more things.”

Continuous improvement is also present in the way IKEA works with suppliers. IWAY ensures that suppliers follow the minimum requirements of environmental, social and working conditions. Compliance is ensured by audits, the KPI Supplier Sustainability Index, and the IWAY process that educates and supports suppliers to improve their level of compliance. Efforts to continuously improve the IWAY process and related competence is performed through the IWAY global training programme, helping co-workers to more effectively communicate and assist suppliers (IKEA, 2019b). Ms Reid explains that IKEA’s persistence to evolve is evident through IWAY as well. In 2020, a new version of it is launched. Before, the Code of Conduct was designed as a much more type of yes-no compliance, but it will now focus more on continuous improvement and how exceptional suppliers can continue to improve their positive social and environmental impact.

In the Sustainability report from 2019, IKEA presents their climate footprint related to CO₂ emissions starting at the baseline in 2016. A break in the trend occurred in 2019 as it was the first year since 2016 where the climate footprint from the value chain decreased in absolute terms down to the baseline level (IKEA, 2019b). When asked about the climate footprint and how the previous years stagnation or increase was handled, Ms Reid responds that they were

aware the decrease would take time. Innovation, product development and other activities might take two to three years individually. Although the size of IKEA enables divisions to innovate and release sustainable products that reach many people, do this also requires them to “bring things to scale which slows down the process”. Another example is raw material that accounts for a very large percentage of the climate footprint. To shift or identify innovative materials and really get them to scale and bring them into the supply chain takes many years. Ms Reid believes they are on the right track to decrease the footprint, and believe the way IKEA is continuously trying to improve their work will allow them to reduce CO2 emissions. By identifying what is working and reviewing what the barriers and hinders are that prevents them from moving forward do they know where to continue next. If something is not working, they try to approach it in different ways to accelerate the decrease; “*we are never done; we need to keep moving*”.

4.3 Tetra Pak

4.3.1 Introduction

Tetra Pak is a food processing and packaging solutions company supplying customers all over the world with safe and environmentally friendly products. It was created by Ruben Rausing in 1951 in Lund, Sweden and has since then grown to employ more than 24,000 employees and has production plants in various places around the world. A few of the products packaged or processed by Tetra Pak are beverages, dairy products, ice cream and food, which requires the packaging to be of high standard (Tetra Pak, n.d a). One of the company’s most famous package is the Tetra Brik, a rectangular carton package that has become enormously popular after its launch in the 1960’s because of its simplicity and efficiency as a carrier for beverages. Today, the product is not only practical but also made of 75% material from renewable sources (Tetra Pak, n.d b). The company's vision is to make food safe and available everywhere, and constantly strives to provide and improve processing and packaging solutions to consumers (Tetra Pak, n.d c). Moreover, Tetra Pak focuses on keeping consumption of raw materials and energy to a minimum through the production process and distribution. Business as usual is no longer good enough, and Tetra Pak is committed to “protect food, people and the future” and stresses the importance of a future where the economy is circular and low carbon (Tetra Pak, 2019).

The interview was done with environmental director Erik Lindroth, who has worked within the company for 25 years. Mr Lindroth is originally from Sweden and started with commercial and marketing roles to after roughly 13 years move to the area of sustainability.

4.3.2 Sustainability

“...sustainability is really at the very top and we see today that it’s like a license for doing business and an area for excellence when it comes to building competitiveness, and it will be even more important in the future.”

Sustainability has always been relevant for Tetra Pak’s business activities and it is a part of its history. Since the start, Tetra Pak has focused on efficient distribution of food, minimising food waste and minimising inefficiencies. Initially, it was about saving money, but as environmental and social values gained in importance, efficiency was seen from a sustainable perspective as well. During the time Mr Lindroth has worked at Tetra Pak, sustainability as a whole has always been important, but he believes focus was concentrated only on the economic and environmental perspectives early on.

For Tetra Pak, sustainability started out as a risk that needed to be addressed. In the early 90's, legislation about collection and recycling in the packaging industry started to gain momentum, and sustainability became more important to consider. Mr Lindroth describes sustainability as reluctantly accepted as a new perspective. It was a struggle to make sales and marketing managers see the actual benefits of integrating sustainability in the day to day customer operations in the beginning, but eventually they became convinced of the importance of the subject.

“if you want to get commercial people to start working with sustainability, you have to meet them and tell them how this enables them to serve our customers better, instead of coming with a prescriptive directive or direction that states how to improve sustainability work on Tetra Pak also”.

Gradually, sustainability became integrated into the business concept and the values of the company. In other words, it has been a learning evolution from the top-down. Tetra Pak had already started to work with life-cycle assessment methodology before the recycling legislation, but the company gradually started to implement sustainable practices in its daily operation. Basically, what started as a threat and risk mitigation, evolved into a corporate philosophy flowing through all divisions of company. This was made possible by a strong top-management that was able to convince middle management and commercial colleagues about the importance of sustainability. By motivating people to become more engaged were everyone within the

company able to see the benefits of integrating sustainability in the day to day customer operations. Mr Lindroth concludes this idea with *“If you can’t beat them, join them”*. Today, their sustainability report illustrates a vision that captures both economic, environmental and social value where the SDGs made by UN are taken into account (Tetra Pak, 2019).

Even though the environmental aspect has been a high priority on the sustainability agenda, recently the social perspective of sustainability has increased in relevance and attention, due to the Covid-19 situation. Mr Lindroth explains that although environmental sustainability is important, it becomes secondary since society has derived the attention to more immediate features and pressing risks. He means that environmental challenges and their impact may be slower, but are in the long run more threatening, and will probably have a higher mortality rate than the pandemic if not attended on time. Despite corporate priorities between social and environmental aspects, the company strives to react rapidly to such external changes in society.

4.3.3 Tetra Pak’s value chain

Tetra Pak recognizes the need of ensuring a circular economy and a minimum environmental impact of the operations performed throughout the whole value chain in the future. Therefore, the company aims to implement sustainability in a more extensive approach, encompassing not only its corporate operations, but also the activities at an upstream and downstream level (Tetra Pak, 2019).

Identifying opportunities and challenges have not only been made by analysing the value chain, but through extensive discussions with stakeholders such as customers, suppliers and NGOs. In order to reduce its environmental impact across the value chain, from sourcing to productions and from use to disposal, Tetra Pak works with different actors, especially close with its suppliers (Tetra Pak, 2019). Collaboration with suppliers has been translated into successful partnerships, for instance the launch of plant-based plastics required a close relationship with Braskem, a Brazilian plastic producer. It produces plastic based on bioethanol from sugarcane, which is basically the only raw material available at the scale of volumes required by Tetra Pak. The partnerships started in 2011, and it has grown in importance when it comes to the overall sustainability discussion for the customers in the food industry. Moreover, this value chain partnership resulted in fruitful benefits for both sides. Despite its benefits, the relationship faced some constraints in the beginning due to supply credibility, and the value appropriation that Tetra Pak demanded at the beginning due to customers’ information requirements around the

renewable material. So, Tetra Pak was forced to upgrade its ability to obtain relevant information about the material from suppliers to answer customers.

In general terms, Tetra Pak relies on a Supplier Code of Conduct to regulate its relationship with its suppliers. In case of inconsistencies or deviations, Tetra Pak undertake a mitigation plan to help the supplier rectify the problem. Nevertheless, Mr Lindroth acknowledges the role of certifications and its importance, in order to facilitate control throughout the process of the whole supply value chain. He defines this feature as a “mutual dependence” in a way that all the actors need to uphold certifications requirements, and this ensures sustainability in every step of the way.

Another important aspect is how the external factors affect where along the value chain that sustainable efforts are concentrated. For instance, in July 2019, the EU legislation banned the use of plastic straws and by July 2021 should they be replaced by paper straws. Even though Tetra Pak had considered paper straws as a potential product development for a long time but had no previous intention of allocating more resources to that specific development. Also, customer demand of the product was not enough. Yet, the new legislation forced Tetra Pak to reconsider and adapt. Developing a paper straw that would function acceptably was an initial challenge, but the company was able to develop a straw that works. A second, current challenge is to get the industrial capacity to produce the straws for customers. Roughly, capacity for five billion straws is needed and 30-40 million euros will be spent on investment and development. Mr Lindroth tells that if someone had asked him and his co-workers two years ago if they wanted to spend 30 million euros on the development of paper straws to improve their environmental performance, they probably would have said no.

“...if we would have chosen, we would have spent that money on other things, but the legislation made the decision for us and for our customers. So we...there is no choice, it's either that or you're out of business.”

Another example of the external demands towards more environmental practices throughout the value chain is operating with renewable energy. Tetra Pak has gradually switched to renewable energy across the company, and the length of the process has varied from market to market based on each country's conditions. Doing so has helped Tetra Pak reduce CO2

emissions, and the company is dedicated to reducing emissions by 42 percent by 2030 (Tetra Pak, 2019).

4.3.4 How Tetra Pak uses continuous improvement

Tetra Pak performs continuous improvement along the value chain, in collaboration with listening to suppliers and other stakeholders (Tetra Pak, 2019). Continuous improvement is present in several parts of the company. For instance, development activities, which include principles designed for environment concepts that are mandatory for all new R&D products to follow.

Continuous improvement is part of Tetra Pak's work culture, which is applied systematically through World Class Manufacturing principles. Thus, good practices can be captured and then spread systematically within the company (Tetra Pak, 2019). Additionally, inefficiencies are eradicated in a stepwise approach. One important target is the one set for recycling rates. Almost 100% of material waste is recycled, the rest is responsibly managed in compliance with the respective regulations (Tetra Pak, 2019). Such action is undertaken in all the countries that the MNC operates in, where efforts are made to totally cut its waste. However, when it comes to the rate calculation, some difficulties arise. Even though there are sometimes official figures, Tetra Pak needs to collect data from information sources, like recycling volumes of recyclers, to further consolidate the numbers and estimate the total market size. Despite being a challenge, Tetra Pak works intensively together with its partners to drive recycling rates in the right direction through knowledge-sharing and commitment.

Regarding the follow-up of implemented sustainable practices, assessment is performed globally. Mr Lindroth sees such process from an internal and external perspective. The former incorporates the follow-up operations at top management level, where managers quarterly meet the Sustainable Council and revise key aspects together with the CEO. In practical terms, sustainable targets are designed and followed up, using different tools and scorecards to detect challenges along the process. As for material-basis follow-up, sustainable practices are measured annually as well, engaging external stakeholders to evaluate where Tetra Pak's biggest impacts are, as well as their most important expectations in terms of need for improvement. From an external perspective, sustainable practices are followed up by external agency audits. External audits also apply when Bonsucro, a certifying company for plant-based plastic packaging, follows up sustainability practices. This company sets tough standards for

sugarcane production and bioethanol production. Mr Lindroth considers that important improvements have been made towards the compliance of certifications that ensures a robust responsible supply chain. He considers external audits as normal procedures when the company certifies most of its corporate activities. Mr Lindroth further reinforces the idea that continuous improvement is very well ingrained in the company. The outcomes of the revision of sustainable practices sets somehow the direction for the future. In other words, after measuring sustainable performance, gained knowledge is incorporated.

One key feature for Tetra Pak regarding sustainability improvements is a close relationship to the customers and a thorough understanding of their needs. Mr Lindroth reflects upon that the efforts made by Tetra Pak regarding sustainable improvements have an economic interest behind it, as a company. In other words, sustainable improvements are not done out of charity and are *per se* meaningless if the customers do not matter or do not appreciate them. Therefore, customer centricity is a key feature to translate sustainable improvement into lasting competitiveness. Certainly, his key job in Europe is to drive customer perspective into the sustainability work and vice versa.

“we understand our customers, our external reality in good time so that we are able to adapt our internal processes, our resources, our capabilities to better serve the needs of our customer. We want to make our customers the hero so if they can become stronger in their sustainability work by working with us as a supplier that is a win-win”

4.4 Volvo Buses

4.4.1 Introduction

Volvo Buses is a brand leader company that produces buses and coaches. The company is part of Volvo Group and is present in more than 85 countries. Created in 1927 in Sweden, the company employ more than 8,000 workers and annually produces approximately 9,000 vehicles, establishing itself as an innovator of electromobility solutions (Volvo Buses, n.d a-b). The mission of Volvo Buses is to offer sustainable transport evolution through assisting operators and communities to provide people with transportation that is efficient and safe (Volvo Buses, n.da). Accordingly, the MNC launched its first hybrid bus and hybrid double decker bus in 2008. One of Volvo Buses objectives is shaping cities for the future with transporting solutions, which aims to be congestion-free, as well as completely reduce

emissions and noise pollution. In 2016, and in collaboration with the City of Gothenburg, Volvo Buses launched its first electric bus that operates as public transport. After that year, Volvo reached record sales of diesel-free buses, and nowadays the company focuses on the testing of autonomous buses in the City of Gothenburg. By offering safe and sustainable transport solutions, Volvo Buses have been working with up-to-date technology, which has allowed the company to keep its world leader position in commercial transportation (Volvo Buses, n.da-b).

The interview was conducted with Stefan Widlund, City Mobility Director of Volvo Buses. Originally from Sweden, he has been working in the company for three years primarily with electrification and electric buses and deployment for cities, which is a topic much related to the environmental sustainability goals of the company and of the cities they work in.

4.4.2 Sustainability

Although Mr Widlund only has worked at Volvo Buses for three years, he tells that Volvo has worked proactively with sustainability for a long time. As a strive to minimize the consumption of diesel and fuel has Volvo Buses tried to reduce emissions and build more efficient vehicles, leading to the development of electric buses. Moreover, its strong efficiency-oriented way of working has allowed the company to produce eco-friendly products for a long time. So, because of its long trajectory in sustainable business, sustainability was not considered as a threat in terms of risk mitigation at early stages, since the efficiency-oriented business perspective had already contributed to develop sustainable vehicle production.

“...I would say it was more like an evolution of always working with more efficient vehicles (...) we could have had the electric buses even without the cities focusing on the CO2. But that is an additional value and for sure has helped to increase the speed of deployment of electric vehicles”

Mr Widlund highlights the awareness towards sustainability that Volvo has developed throughout the years. An important aspect is that it has been a part of the overall business. Sustainability is deeply integrated into the ongoing work and business processes, and not regarded as a division or consideration of its own. Challenges connected to several areas are dealt with, not only economic, social and environmental but also technological, legal and political (Volvo Group, 2019).

4.4.3 Volvo Buses value chain

Volvo tries to improve its long-term competitiveness by augmenting value creation throughout the value chain, quality and reliable performance towards its employees, the environment, and its business partners. Volvo's most important components of the value chain are customers, product development, purchasing, production & logistics, retail & service and reuse. Especially customers constitute the epicenter of the MNCs core business and operations, and their opinions and satisfactions are taken into account throughout the whole value chain. Creating value for the customers implies value creation for the company itself, as well as its other stakeholders. Further on, product development encompasses not only meeting the customers' expectations, but also considering Volvo's environmental performance. At an upstream level, purchasing encompasses continuous collaborations with the MNC's suppliers. Going downstream, production and logistics performs continuous improvement in order to meet customers' expectations and meet internal objectives. On the other hand, retail and service are primarily customer-oriented activities, which aims to meet its requirements. Finally, reuse is an example of how value chain is used to implement sustainability, which includes all the initiatives and procedures that Volvo undertake to enhance environmental performance, such as recycling and waste (Volvo Group, 2019).

Suppliers are considered as pivotal actors within the value chain. Volvo collaborates with its suppliers in terms of innovation to focus on environmental and social sustainability. Such synergy encompasses value sharing initiatives and trainings, which aims to create an eco-way of thinking (Volvo Group, 2019).

“the center or the epicenter of sustainability was from the beginning only about the environmental aspect of the vehicles. Now it is equally important how the components and the suppliers, part of the overall sustainability, are impacting. So that is a change that has become more and more obvious I think in the last two years or so”

Furthermore, the supplier relationship is systematically supported by several components such as Code of Conduct, or Supplier Sustainability Assessment Program, which strive to facilitate sustainable purchasing, Specifically, the Supplier Sustainability Assessment Program steers the environmental and social aspects of sustainability that Volvo considers in its supply chain partners. This stage becomes relevant in sustainability terms, due to the fact that the company performs an evaluation in environmental performance and business ethics of its supplier to

ensure sustainability practices along the value chain. This objective is also supported by the overall automotive industry collaboration that Volvo supports, focusing on a sustainable supply chain as well as sustainable sourcing (Volvo Group, 2019).

4.4.4 How Volvo Buses uses continuous improvement

Volvo works with continuous improvement within a number of areas to always ensure the customers best interest. Customers satisfaction is taken into consideration at every step of the value chain, such as Production Development, Purchasing, Production and Sales. Continuous improvement throughout these business activities implies measuring sustainability performance and taking corrective actions to improve it. An example of how this continuous process is part of Volvo's daily work is the procedure surrounding projects. When a collaboration or project is finished, it is evaluated and areas of improvement are discussed. If a project is successful, insights and practices are shared between business areas to see how it can be improved to other areas as well. This procedure is also present when trying to find new life to used products. Electric buses run on batteries and after a few years they need to be replaced. Mr Widlund and his co-workers then try to actively find other ways to use the batteries instead of directly sending them to recycling.

Additionally, it was highlighted that even though Volvo Buses is part of Volvo Group information regularly shared within the whole group. Mr Widlund mean that it's hard to distinguish between local or global initiatives since the operational work is always done on a local level, but then aggregated up to a top level for each business area. Also, most of the activities are performed at a European level because of legislation. Naturally some initiatives will be based on a local level, but since sustainability is a global commitment, practices with good result are fed back into the whole organisation

Regarding follow-up implemented sustainability practices, the process is undertaken with scoreboards systems. Then, the results are consolidated with other companies in Volvo Group's sustainability report. Some examples of these parameters are the scope of profitability, customer satisfaction, employee satisfaction, and sustainability. The company underlines the importance of customer satisfaction as "*Customer satisfaction is the true measure of success*" (Volvo Group, 2019 p.46). Through global surveys, the company can access the necessary information to measure the parameters and feed into scoreboards (ibid.).

4.5 SSAB

4.5.1 Introduction

SSAB is a global company within high-strength steel production, more specifically, advanced high-strength steels, strip, plate and tube products. The company has Nordic roots going back 140 years and has grown through mergers, the latest being with the Finnish company Rautaruukki in 2014. SSAB has plant facilities primarily located in Sweden, Finland and the US but is also able to process steel products in other parts of the world, such as China and Brazil (SSAB, n.d.a-b). Positioned as a relatively small player with Nordic origins but with global presence, SSAB has the advantage to produce steel which is durable, strong and recyclable. As innovation is part of its core business, SSAB works actively to constantly develop and improve its products and services from both an efficiency-based and innovation-based perspective. Substantially, SSAB has been dedicated to work with sustainability for a long time and in many ways, being aware of resource scarcity, ongoing urbanization and climate change. However, new and eco-friendly infrastructure is needed in order to bring sustainable solutions to the customers. So, the company aims to take a step further in its sustainability path and be capable to sell fossil-free steel to the market by 2026. Likewise, SSAB plans to completely reduce its CO₂ emissions by 2045 (ibid.).

The interview was held with Thomas Hörnfeldt, who is Vice President of Sustainability and Public Affairs. Mr Hörnfeldt has been employed within Rautaruukki since 2011 and started working at SSAB in 2014 along with the merge of the two companies. He started as a Business Area Manager and then moved into Market Intelligence and Business Development, to later mostly focusing on Sustainability.

4.5.2 Sustainability

Mr Hörnfeldt tells that sustainability has always been a part of the company, since 1974, but how the concept is viewed has evolved through the years. Back then, it was a matter of resource efficiency and productivity. SSAB has always been promoting stronger and lighter steel solutions from a cost-savings perspective and demand from customers. It was not until later that reduced emissions, reduced energy consumption and increased resource efficiency were connected directly to the notion of sustainability. At a higher level, sustainability was always

supported and top management was an important factor to integrate sustainability further down in the organisation.

“SSAB has always been promoting stronger and lighter steel solutions, which means resource efficiency, because our customers needed to use less steel, so less resources. But also their products will typically have lower energy consumption. A lighter truck needs less piece of fuel, pretty much”

When Mr Hörnfeldt worked within Market Development at SSAB, sustainability was viewed as a business drive, a competitive advantage. Today, Sustainability is at the core of SSAB's operations and the company strive to create a more sustainable world in all undertaken activities. Accordingly, SSAB has developed a sustainability strategy that encompasses three areas: *Sustainable offering, Sustainable operations and Responsible partner*. *Sustainable offering* entails that SSAB has adapted its products to impact the planet as little as possible, as part of more sustainable solutions. Namely, the company motivates its customers to use high-strength steels, which can improve their products by making them less heavy, high fuel-efficient and loading capacity. The second area, *Sustainable operations*, involves sustainable efforts in the company's daily operations. For instance, it is aimed to work with fossil-free steel throughout its entire operations by 2045. Finally, *Responsible partner* involves the self-acknowledgement of the large responsibility that the company has within the steelmaking industry. Therefore, SSAB sets high sustainable targets and standards in regards of business ethics and responsible sourcing (SSAB, 2019). Through a stepwise process will the company move towards a fossil-free steelmaking process that will lead to fossil-free steel in 2026 and fossil-free operations in 2045.

When asked about the social and environmental dimension within sustainability, Mr Hörnfeldt explains that although they do consider the social dimension in terms of working with inclusion and human rights, SSAB can create most environmental value for customers by reducing the company's environmental impact. Looking at it from an internal perspective, the environmental aspects is also the most important one especially the greenhouse emissions. SSAB's sustainability report covers economic, environmental and social value and illustrates efforts to improve all three (SSAB, 2019).

Mr Hörnfeldt means that the most important steps that SSAB has taken to be where they are today regarding sustainability has depended on the company setting ambitious, but achievable, targets based on a clear vision. He further states that *“Having a vision, having an assignment, knowing where we want to go. To make that clear for the organisation, it's absolutely crucial”*.

4.5.3 SSAB's value chain

SSAB implements sustainability along the main areas of its value chain, where efforts are made to handle possible impacts and create positive results and value. The main areas are sourcing production/operation, transportation, use phase and end-of-life. More specifically, in 2014 the company conducted a materiality assessment to identify the most important sustainability aspects along the value chain both at upstream and downstream level, from a social, economic and environmental perspective. Secondly, stakeholders' expectations and interests were also considered, which were materialised by surveys, workshops and fluent dialogue (SSAB, 2019). Mr Hörnfeldt assures that responses from the stakeholders externally and internally were actually very similar, where environmental aspects and SSAB's Code of Conduct seemed like high priorities. All in all, materiality assessment was experienced as a smooth process and a relatively straightforward exercise.

At an upstream level, sourcing operations represents a relevant area for SSAB regarding sustainability, since the firm's main purchases are natural resources such as iron and steel. Therefore, the company strives for a sustainable supply chain by establishing a Supplier Sustainability Policy, which regulates the relationships with its suppliers and is based on the UN Global Compact principles. Normally, supplier assessment is performed through a systematic process, which normally consist of risk and self-assessment, with a sustainability clause in contracts and annual sustainability audit plan. After that, SSAB performs visits to the suppliers' facilities in order to follow-up the actual concretion of implementing sustainability, leading to corrective actions if unsatisfactory results are identified (SSAB, 2019). Mr Hörnfeldt named one example of a successful collaboration with a shipping supplier. The supplier has developed new natural gas- powered cargo ships that SSAB uses in the Baltics, which has much lower environmental impact than the traditional heavy oil-based ships. Working with suppliers that already implement sustainable solutions in their value chains facilitate future collaborations that are sustainable compatible with SSAB in the future. For instance, the fact that the shipping company uses natural gas might lead to the possibility to use biogas in the future.

At a downstream level, SSAB works actively to deliver sustainable solutions to its customers. Namely, the company acknowledges its responsibility towards environmental sustainability in the industry, since it lets out more CO₂ emissions in both Sweden and Finland than most companies. This is partly because even though SSAB is CO₂-efficient, the MNC is a relatively robust company in a relatively small country. Consequently, developing sustainable sourcing becomes an even greater responsibility and allows SSAB to help customers use more environmentally friendly products. Mr Hörnfeldt said that *“towards our customers, I think that reducing environmental impact is where we can contribute the most”*.

One relevant example of a sustainability target is the objective of producing fossil-free steel by 2026. Such commitment encompasses the engagement of stakeholders, upstream actors like suppliers, downstream actors, such as customers and distributors. It has also required research efforts, and the company admits it was performed in a small scale in the past. However, being the first company to soon do it on an industrial scale will present some challenges. For instance, switching from fossil-fuel to fossil-free requires electricity and the construction of powerlines. In Sweden, permit process for high voltage powerline can take up to twelve years.

In hopes of reaching the fossil-free steel target, SSAB has engaged itself with two strategic partners, LKAB which is its biggest ore supplier, and Vattenfall, who provides electricity. This joint venture is called HYBRIT and its objective is to become the first company to switch from coking coal to hydrogen and offer customers fossil-free products by 2026. There is an increasing number of industries and companies that work actively in environmental sustainability to decarbonize their activities, which would naturally impact their subcontractors and raw material producers. Equally, there is an ongoing demand in interest for environmental sustainability among SSAB's customers (SSAB, 2019). Consequently, this partnership facilitates that the whole value chain, from ore in the mine to finished steel, is aligned towards environmental sustainability through fossil-free steel.

“... Especially this fossil-free commitment, it is not like saying “we are going to put the man on the moon before the end of this decade”, but it is a little like that. We have always been good, but now we have a very clear target to take the next step, and that is something that people like”

4.5.4 How SSAB uses continuous improvement

Continuous improvement is an approach SSAB uses in many of their operations. For example, the approach is used to minimize emissions and improve productivity (SSAB, 2019). The company has a Head of Sustainability who is responsible for strategy development and coordination of sustainability at the top level. Below is a sustainability management team representing different divisions and subsidiaries that has the responsibility to coordinate and drive the company's sustainability initiatives. In order to ensure continuous improvement, SSAB uses an environmental management system that makes sure environmental performance is monitored against environmental targets. Moreover, regular audits are made at production sites to verify suppliers comply with the Supplier Sustainability policy (SSAB, 2019).

Continuous improvement is used through the internal approach called SSAB One. Targets are first set during a strategy deployment process which is communicated top-down to teams and individuals across all divisions within the company. Then, improvement projects are identified throughout the organisation with the intent to improve quality, cost-efficiency and delivery performance. Cross-functional teams with co-workers from all levels are crucial in discovering challenges and opportunities, as well as sharing best practices (SSAB, 2019).

Suppliers are categorized based on what country and industry they operate in since some countries have less strict legislation. Mr Hörnfeldt tells that they are then evaluated from a three-step approach. A supplier assessed as low-risk fill in a self-assessment questionnaire and a mid-risk supplier is subject to onsite visits where their operations are more thoroughly reviewed. If it is a high-risk supplier, an independent professional external partner makes a sustainability assessment.

Mr Hörnfeldt mentions the HYBRIT initiative as another example of SSABs strive for continuous improvement. The initiative started with a brief feasibility study for almost two years to map the prerequisites and principles behind it. Following was a pilot plant that would be tested until 2025 and then, in 2026, a real industrial plant in small scale would be built as a demonstration. Later, top management realized that the real plant could be built ahead of time and that SSAB would be able to deliver fossil free steel to the market on commercial conditions already in 2026. Although pushing the timeline has been a challenge, setting targets and following them has been crucial, combined with a strong support from top management.

4.6 Summary of empirical findings

To summarize the empirical findings, a table is presented below with key information about each MNC.

	Stora Enso	Ikea	Tetra Pak	Volvo Buses	SSAB
Sustainability	Integrated for a long time, TBL specifically mentioned by Mr Collander. Initially seen like risk mitigation and compliance.	Been important for a very long time. Initially only referred to environmental and social dimensions without including the economic one. Initially seen like risk mitigation	Sustainability as a whole has always been important, but focus was concentrated only on the economic and environmental perspectives early on. It was first seen as a risk that needed to be addressed.	Worked proactively with sustainability for a long time. Deeply integrated into the ongoing work and business processes.	First viewed as a matter of resource efficiency and productivity that later evolved into sustainability.
Value Chain	Tries to ensure sustainability throughout the value chain. VCA and listening to stakeholders helped shape sustainability work.	Strategy formulated from a total value-chain perspective and covers the whole value chain. Ability to integrate sustainability into everyone and throughout the organisation whilst continuously asking where to prioritise and focus	Aims to implement sustainability along the value chain. Identified opportunities and challenges by analysing the value chain and extensive discussions with stakeholders..	Improve long-term competitiveness by augmenting value creation throughout the value chain, Customers importance accounted for in all business operations.	Sustainability implemented along the main areas of the value chain. HYBRIT initiative to reach fossil free steel target.
Use of continuous improvement	Continuous improvement present within sustainability work. Assessment of sustainable performance is done through KPIs. All targets and implemented actions are closely monitored by management teams	Uses a sustainability risk management process to identify, review and mitigate risks through a continuous cycle. An initiative that is not working is approached in different ways so improvements can be made.	Continuous improvement applied systematically through World Class Manufacturing principles. A thorough understanding of customers needs is a key feature for improving.	Continuous improvement used within a number of areas to always ensure the customers best interest. Score board systems used to asses activities	Continuous improvement used through internal approach called SSAB One in many operations

Table 4: Summary of empirical findings compiled by the authors

5. Analysis

This chapter analyses and discusses the empirical findings based on the theoretical framework. Firstly, sustainability will be discussed, followed by the value chain and continuous improvement.

5.1 Sustainability

Committing to a more sustainable-oriented way of doing business, entails MNCs to not only consider economic values, but also to integrate social and environmental values in strategic commitments towards stakeholders (Osiro, 2018; Camilleri, 2017; Joyce & Paquin, 2016). The value-creating activities performed within a company should therefore strive to make profit without harming people or the environment (Cavagnaro, 2018). The importance of sustainability is present within all the MNCs participating in the study. All respondents mean that sustainability has been an important part within the companies for a long time and was even referred to as a responsibility by Ms Reid from IKEA. Further, when asked about sustainability and to what extent it was integrated within the companies, respondents mean that it has been an important part for a long time. An interesting aspect shown from the empirical findings is that sustainability initially was not seen as a voluntarily matter to address for some MNCs. Rather Stora Enso, IKEA and Tetra Pak started to view sustainability as a way to mitigate risks. For instance, Stora Enso did not have a clear systematic approach to sustainability as a whole concept twenty years ago. The company only saw sustainability as risk mitigation and compliance. However, Stora Enso gradually integrated sustainability into its core business and was able to assemble and align the different lines of the TBL, thus building a holistic way of looking at sustainability. Doing so is in line with Joyce & Paquin (2016) who mean that a holistic approach where coherence between economic, environmental and social value can be vertically and horizontally integrated within a business. Contrarily, Volvo did not primarily view sustainability through risk mitigation, but as an evolution of its ongoing resource-efficiency schemes and practices. In this sense, the company's way of working led to finding more economic sources for replacing fuel-based vehicles for electric one's years ago. So, resource efficiency contributed to sustainability implementation as a natural, following step in developing sustainable vehicle production.

As mentioned in the introduction, rising awareness about sustainable development is becoming increasingly important and has prompt organisations to consider how to devise sustainable

solutions for the future (Deloitte, 2020; Forbes, 2020; Rauter et al., 2015). Thus, sustainability has become a necessity that companies need to consider. The MNCs participating in the study are committed to do business in a sustainable manner and integrate sustainability in their operations. To exemplify, all MNCs have made an active decision to reduce their CO₂ emissions. Such commitment entails two important features. Firstly, companies have made efforts to adapt their value chains to implement more environmental solutions for decarbonizing their processes and activities. Such substantial change not only requires time and economic resources but also aligning sustainability efforts with actors not limited to a certain part, but along the whole the value chain. Doing so is in line with Cavagnaro (2018) who mean that sustainability applies all along the value chain. Secondly, companies need to respond to external forces and stakeholders that demands more sustainable corporate activities which corresponds to Elkington (1998), Hart & Milstein (2003) and Seuring & Miller (2008) that emphasizes the importance of external forces and stakeholders. Adapting to external demands could help MNCs to maintain social legitimacy and increase the trust between stakeholders and the company.

A central component of sustainability is the TBL which extends the traditional economic bottom line to focus on creating economic, environmental and social value (Bocken et al., 2014; Cavagnaro, 2018). The MNCs in the study actively try to consider the three dimensions of TBL as illustrated in their Sustainability Reports, whereas only Stora Enso uses the term explicitly. Another interesting aspect is that although the MNCs seem to actively try to consider the three dimensions of the TBL, the empirical findings derived from the interviews suggest that sustainability seems to be mainly interpreted from an environmental perspective. Many participants bring up environmental examples when asked about challenges related to VCA or continuous improvement.

The academic literature suggests that improving and innovating processes could result in better environmental methods such as recycle, reuse of resources and eliminating waste in a more efficient way (Venkatraman & Nayak, 2010). Such a sustainable-oriented innovation is a proven way to work for organisations to create competitive advantages (Nidumolu & Rangaswami, 2009). Focusing on improving environmental methods is therefore more beneficial for the participating MNCs and may be why environmental aspects seem to be of greater focus for the respondents in the study. Such general interest of environmental aspects may not only derive from a corporate standpoint, but also from society and other stakeholders.

The MNCs notably emphasizes the role of external stakeholders, which is in line with Elkington (1998), Hart & Milstein (2003), and Bocken et al., (2013). Based on the empirical findings does it seem like the studied MNCs need to adapt to stakeholders' requirements, although they may not always be willing to allocate resources to meet such expectations. Seemingly, external stakeholders have a direct impact on where companies' sustainable efforts are focused. If stakeholders are more interested in environmental issues they could influence where MNCs place their sustainable efforts, or what the companies choose to communicate externally. There is therefore a chance to work with sustainability and meet stakeholders' expectations, creating value that will eventually lead to profit in the long run.

Teece (2010) emphasizes that a firm need to capture and create value that customers are prepared to pay for, hence resulting in profit. Answers from the respondents indicates that the economic value seems to have been of great importance in the beginning. Ms. Reid from IKEA states that for the company to pursue sustainability long-term, the economic dimension needed to be included. Tetra Pak initially focused on saving money but when environmental and social values gained importance, efficiency was seen from a sustainable perspective as well. Similarly, SSAB first defined sustainability as being resource efficient and productive, and Mr Hörnfeldt pointed out that within his division, sustainability was seen as a competitive advantage. It could therefore be suggested that sustainable improvements are done not only for the greater good, but also to improve competitiveness and long-term advantages. Regardless of the motives, it seems that organisations can make a long-term effort to align economic success with environmental and social practices, which is in line with Camilleri (2017). Throughout the interviews, it became evident that MNCs are still bound by the economic aspect and sometimes must make trade-offs. Tetra Pak recognizes the economic aspect and Mr Lindroth mean that sustainable improvements are not done out of charity but need to create value and competitiveness. Mr Collander from Stora Enso points out that all companies must prioritize and only have a limited amount of spending that they can use, and IKEA want to be a sustainable low-cost company which entails finding sustainable, relatively cheap materials.

Baumann-Pauly et al. (2013) and Udaysankar (2008) suggest that SMEs usually are the ones experiencing time and resource limitations that undermine the process to incorporate sustainability in the value chain. However, there is not enough evidence to support that such a statement is only applicable to SMEs (ibid), which is further emphasized in our empirical findings which shows that the constraints can also be applicable to MNCs. Both IKEA and

SSAB recognize time as a constraint when discussing sustainable value creation. Ms. Reid from IKEA stated that time is often a factor that interferes when trying to overcome challenges regarding sustainability. SSAB also faced shortcomings related to time when switching fuel-based energy to electric energy in Sweden, due to the fact that the infrastructure setting takes approximately twelve years. Tetra Pak also shows evidence that time and resources are unrelated to the size of a company. Mr Lindroth explained clearly that the company is forced to replace plastic for paper straws by 2021 due to EU legislation. The company needed to allocate 30-40 million euros, not only in R&D to adapt new materials to an existing product but also to build up the industrial capacity to produce paper straws in a relatively short period of time. Thus, time and resource constraints apply to MNCs as well and could be mitigated by preparing for external changes before they occur.

According to Seuring and Muller (2008) companies set up environmental, social and economic goals as part of their overall strategic objectives. However, internal and external factors can affect reaching these goals, which underlines the need to identify and mitigate such risks. Empirical findings indicate that MNCs work to align short-term activities with long-term goals. Mr. Lindroth from Tetra Pak illustrates how rapid, unexpected changes can sometimes alter focus and stall progress due to the current situation with the Covid-19 virus. The pandemic has forced Tetra Pak to address more urgent social sustainable matters, and concerns related to environmental sustainability has temporarily been deprioritized because society is occupied with more immediate social risks. Even though he explains that the environmental risks are more threatening in the long run than the virus, society has derived its attention to social sustainability such as the virus, leading to a change of priorities from a corporate approach. Such finding suggests that MNCs might struggle sometimes to align short-term focus with long-term, especially when sudden, unrelated events that needs immediate adaptation occur. Covid-19 is however a unique case and may not provide an accurate picture of how MNCs usually adapt short-term activities to align with a long-term vision. After all, every studied MNC in our study have broken down long-term environmental and social goals into short ones, in order to assure their efficient achievement. Mr Lindroth seems to view Covid-19 as a social aspect that Tetra Pak need to consider. Balancing the three dimensions is harder than it may seem due to the fact that MNCs are affected by both external circumstances and the changing attention of stakeholders. We do however not know if the other MNCs actually view the pandemic as something they need to address from a sustainability perspective.

Venkatraman and Nayak (2010) state that a balance between the three dimensions of the TBL can be achieved through the underlying principles of innovation, integration and interdependence. The findings from our study does not show any strong evidence that companies have explicitly considered these underlying principles, but they may still be considered implicitly. For example, there is some findings that suggests that innovation has been an important factor for IKEA in the beginning of its sustainable journey. When the company started seeing that there were many possibilities to innovate and do things differently than competitors, the economic dimension seamlessly became included and sustainability evolved into a long-term commitment. This is in line with Venkatraman and Nayak (2010), who mean that innovation can help improve ideas and lead organisations to rethink processes and redesign products or services in a more sustainable manner.

To summarize the analysis of sustainability, the MNCs all consider it to be important and present within the organisation. Three of the MNCs initially saw sustainability as a way to mitigate risks, whereas the other two looked at it as more of an evolution. All MNCs in the study actively try to consider the three dimensions of TBL, but only one of them use the term explicitly. Also, sustainable improvements do not seem to only be done for the greater good, but also to improve competitiveness and long-term advantages. Regardless of the motives, it seems that organisations can make a long-term effort to align economic success with environmental and social practices. How MNCs consider their value chains will be analysed in the next section.

5.2 Value Chain

Creating value is a necessity companies must do for survival (Porter, 1986; Teece, 2010), illustrating the importance of the value chain. By understanding MNCs activities and identifying which areas that are most important, the easier it is to identify where sustainable value can be created (Cavagnaro, 2018; Porter and Kramer, 2011). Therefore, it is reasonable to assume that it is within the value chain that implementing sustainability will gain the most relevance and effect. Based on the empirical findings, the five MNCs have thoroughly considered their value chain to discover where most sustainable value can be created. Such findings are in line with the conceptual framework which illustrates the importance of the value chain when implementing sustainability. A common feature derived from the interviews and secondary sources is that almost all MNCs integrate sustainability to some extent along the

whole value chain. The only one who said that it was not completely incorporated was Ms Reid from IKEA. Given IKEA's substantial Sustainability report and Ms. Reid's knowledge, the authors are prone to believe that IKEA is as committed to implementing sustainability as much as any of the other MNCs. Rather, she recognized that IKEA's value chain is long and complex, and that completely integrating sustainability is hard. Also, all MNCs have placed much efforts on reducing their CO2 emissions. Thus, this could be interpreted as a recognized challenge that needs to be attended, regardless of what industry the MNCs are operating in.

Helin & Babri (2015) state that MNCs need to consider the global context when making sustainable lasting environmental and social improvements in their worldwide value chain activities. The studied MNCs operate in many different countries which require them to adhere to local legislations and requirements as well as implementing a global sustainability agenda. Implementing sustainable practices in different countries entails different contextual factors that could affect interpretation and compliance of local regulations. Thus, divisions need to perform cross-sectional and cross-country analysis when monitoring sustainability performance, which allows for knowledge and practices to be shared across internal business divisions and country borders. Mr. Widlund from Volvo explains that sometimes it is difficult to distinguish between local or global initiatives since the operational work is always done on a local level and then aggregated up to a top level for each business area. Some initiatives will naturally be based on a local level to meet local requirements, but since sustainability is a global commitment, satisfactory practices will become global as they are incorporated in the whole organisation. The authors of this study therefore believe that companies should try to balance their global and local sustainability performance and initiatives for two reasons. The first one is that a global scope ensures alignment with the MNC's sustainability agenda, independently of the market that it operates in. This way the company maintains all its divisions and activities harmonized under the same sustainability goals. The second reason is that a sustainable agenda should allow units to locally adapt sustainability initiatives and practices. By taking into consideration host-country legislations and local factors, the company develops local embeddedness and gain social legitimacy by adhering to local sustainability initiatives.

5.2.1 Three dimensions ensuring sustainable value creation

As stated in the theoretical framework, sustainable value creation is assured through VCA by considering three dimensions, namely *scope of the value*, *limits of analysis of the value chain*, and *governance* (Fearne et al., 2012).

Scope of the value depicts the width of the sources and the beneficiaries of the value created (Fearne et al., 2012). Regarding the scope of the value, three out of five respondents mention in some way that either cost or resource efficiency was initially the primary focus that then evolved into sustainability. Thus, the MNCs seemed primarily focused on performing activities in an optimal, cost-reducing way during and before the 90's. When opportunities and challenges related to sustainability were discovered their work evolved into becoming more efficient, hence focusing on performing the right activities and achieving goals. These findings indicate that through VCA and other tools, some MNCs have been able to look at effectiveness instead of just focusing on efficiency and extend the value that was initially offered to customers. Such findings correspond to the literature (Fearne et al., 2012) Shank and Govindarajan, (1992) mean that created value is not limited to economic terms and extending the scope of the value by including other possible sources of value could lead to differentiation. An interesting aspect derived from the empirical findings is that one MNC strives to go beyond the value chain (IKEA, 2019b) and extend the scope of the value. Doing so is not represented in the conceptual framework (Figure 2) but is still an interesting finding to examine. Although understanding end-consumers behaviour is essential (Fearne et al., 2012), all MNCs in the study except IKEA operate within a B2B modality. It is therefore easier for IKEA to reach the end-consumer and affect them, whereas the other MNCs' products will reach the end-consumer through intermediaries. In any case, all MNCs have customers and see them as critical stakeholders, findings that reinforces the idea that customers are considered very influential when establishing value (Elkington, 1998, Hart & Milstein, 2003). This could stem from the fact that sustainable development has become increasingly important for stakeholders, including customers, and MNCs need to respond to such concerns. Thus, risks of being exposed to criticism can be mitigated. Since creating value that customers are prepared to pay for is a necessity (Porter, 1986), is it fairly reasonable to believe that implementing sustainability consist of this premise as well.

Limits of the value chain encompasses the perspective of considering value creation at an inter-firm instead of an intra-firm level. This means that actors in the value chain share information, skills and objectives to maximise effectiveness along the whole value chain (Fearne et al., 2012). For instance, the studied MNCs have adopted Code of Conducts that suppliers need to adhere to, and suppliers are also assisted when difficulties arise in relation to compliance. By committing to undertake mitigation actions if inconsistencies or deviations arises during sustainable implementation, MNCs work to ensure effectiveness along the supply chain (Fearne et al., 2012). In addition, the MNCs will benefit from sustainable value creation and simultaneously contribute and support other actors' involvement in sustainability. Thus, all the companies seem to have achieved value creation related to sustainability through an inter-firm lens.

The last dimension refers to *governance*, which states that relationships can result in collaborations needed to create competitiveness and innovation along the value chain (Gereffi, 1994). Fearne et al. (2012) suggest that relationships might lead to value creation as a long-term competitive advantage since they could represent a complex and valuable asset difficult to imitate or duplicate. Two companies that have created valuable relationships are SSAB and Tetra Pak. SSAB have established the joint venture HYBRIT with other actors in order to meet its own environmental target of becoming fossil-free by 2026. HYBRIT is integrated by the company's biggest supplier LKAB and its energy provider Vattenfall, indicating that SSAB have strategically analysed its value chain and the potentially shared value that this synergy could cultivate. Therefore, HYBRIT gives SSAB the possibility to gain a competitive advantage, since this joint effort includes large actors in the steel industry that could place the company in a strategic position among its competitors. By doing so, SSAB could benefit from potentially shared value as an asset difficult to imitate or duplicate. Tetra Pak has also succeeded in its efforts to become more environmentally friendly along its value chain through synergistic relationships. Aiming to produce plant-based plastics, the company partnered up in 2011 with Braskem, a Brazilian plastic producer. It produces plastic based on bioethanol from sugarcane being the only raw material available at scale volume that Tetra Pak demands. Now Tetra Pak has the possibility to offer plant-based plastics in its packing to the whole food industry, which could lead to competitive advantage. We have some indications that the third dimension for ensuring sustainable value creation is of relevance to assure sustainability along the value chain, and pushes industrial competitors to also adopt improved and more efficient sustainable practices. SSAB and Tetra Pak have positioned themselves within their industries by joining

efforts with strategic partners and thereby acquired complex and valuable assets difficult to imitate or duplicate.

5.2.2 Use of VCA

The empirical findings show that the companies to some extent have undertaken VCA when implementing sustainability, thus corresponding with the conceptual framework (Figure 2) created for this study. Although not all MNCs specifically mention VCA, indicators in their answers suggest that they are conducting VCA either partly or fully. Below follow some examples of the steps undertaken that are similar to the ones proposed by the literature (Taylor, 2005; Francis, 2008; Bonney et al., 2009; Soosay et al., 2012).

The first step is to engage all members of the chain (Taylor, 2005, 2006) to ensure success when performing a VCA. All respondents mention stakeholders' importance when implementing sustainability along the value chain, which is in line with Elkington (1998) and Hart & Milstein, (2003). Another example of engaging members is the way the MNCs have worked with their suppliers. Similarly, the MNCs have used Code of Conducts that has shaped their relationship and enabled sustainability along upstream activities. To exemplify, SSAB bases its Code of Conduct on UN Global Compact principles. The code entails that the company must perform a supplier assessment following a systematic process, which normally consist of risk and self-assessment, with a sustainability clause in contracts and annual sustainability audit plan. After that, SSAB do visits to the suppliers' production plants in order to follow-up the actual concretion of sustainability implementation, leading to corrective actions if unsatisfactory results are identified.

The next step of VCA is mapping the chain, which entails flow of products, information and relationships needed for sustainable value creation (Fearne, 2009; Bonney et al., 2009; Francis et al., 2008; Taylor, 2005). Evidence about mapping the physical flow of goods has not been identified in the study. However, based on the answers from the respondents, we see it as highly likely that information is shared between the MNCs and different stakeholders. For instance, Tetra Pak's partnership with Braskem experienced constraints in the beginning. Tetra Pak needed more information about the plant-based plastic production involving sugarcane to inform customers. Through information flows Tetra Pak was able to obtain relevant information from its supplier in order to meet customer's requirements, thereby improving both information flows and strengthening the relationship with customers. Empirical findings indicate that

stakeholders are of great importance for the MNCs, and it is therefore in the companies interest to build strong relationships with them. Doing so will facilitate exchange of information and opportunities can thereby be more easily identified. Information flows are probably different depending on the receiver, meaning that MNCs may not share the same information with suppliers as with customers, but there is usually some type of communication between them.

The final step is to identify opportunities and challenges along the value chain to help MNCs to make progress and improvements (Fearne, 2009; Bonney et al., 2009; Francis et al., 2008; Taylor, 2005). Empirical findings indicate that almost all MNCs seem to have used their value chain to discover opportunities and challenges. For example, IKEA has been able to identify opportunities and challenges through VCA, stakeholder discussions and considering external factors. Ms Reid explained that fossil-free energy was at first seen as a negative impact on the industry but later the company saw this as an opportunity of decreasing its climate footprint as well as business opportunities connected to it. Hence, IKEA was able to improve its sustainability performance as well as gain economic benefits from reduction of its climate footprint by offering more sustainable products customers are willing to pay for.

To summarize the analysis of value chain, empirical findings offer sufficient information to demonstrate that the interviewed MNCs have considered the dimensions and the three steps of VCA in their efforts to create sustainable value. However, it seems that the latter step has not been followed stepwise as suggested by the literature (Taylor, 2005, 2006). Answers indicate that opportunities and challenges may have been identified in conjunction with listening to stakeholders. Nevertheless, the different order of the steps do not seem to have been a constraint since the outcome of analysing the value chain has still been to create sustainable value, regardless of what step within the VCA is performed first. All in all, participating MNCs have thoroughly used their value chain when implementing sustainability, which is evident by considering the three dimensions of VCA.

5.3 Continuous improvement

As stated in the conceptual framework, one premise was that the result of the VCA feeds into the cycle of continuous improvement and the PDCA-cycle. The empirical findings indicate that both tools have shaped the implementation of sustainability. Although the MNCs do not explicitly say that the first step was to perform a VCA and then use the PDCA-cycle, it is

reasonable to believe that analysing the value chain was done first. Also, sustainability is affected by a complex and changing context which makes it necessary for companies to analyse the value chain multiple times and constantly revise sustainable practices. Thus, there is a constant interaction between the value chain and continuous improvement. The following section develops how the MNCs have used continuous improvement.

Sustainability exists in a complex and continuously changing context, which requires MNCs to continuously improve activities related to sustainability (Whitfield & McNett, 2014, Bouchery, 2017; IUCN, 2018). Thus, sustainability should not be viewed as a state, but merely a direction (Bouchery, 2017; Silvestre, 2015). Such a view is evident among the MNCs as well. There is strong evidence that they do in one way or another practice continuous improvement and seem to recognize the importance of constant evolution. Such findings are compatible with the conceptual framework (Figure 2) which illustrates that sustainability can be improved using continuous improvement. The respondents tell that continuous revising of sustainable practices is done at several levels of the companies and is monitored by a sustainability committee or council at the top of the organisation. To exemplify, SSAB has a Head of Sustainability who works with a management team that has the responsibility to coordinate and drive the company's sustainability initiatives. Stora Enso has a sustainability team within the Group and each business division has its own Head of Sustainability. All in all, the MNCs seem to adopt a top-down approach which suggests that sustainability and the continuous improvement of it is a relevant matter throughout the organisations. A risk when adopting a top-down approach is that it might be hard to anchor ideas or practices further down in the organisation. Most MNCs seem to have considered this. However, there are some nuances in how the MNCs mitigate such risks. IKEA have adopted a risk-mitigating process where risks are identified and conveyed to the Sustainability Committee through a bottom-up method, and solutions to those hazards are conveyed top-down. Both SSAB and Tetra Pak emphasize the importance of top management to convince lower management of the importance of sustainability, an approach that helps to ensure that sustainability is present throughout the organisation. Similarly, Stora Enso's targets and implemented actions are closely monitored by management teams.

5.3.1 Use of PDCA-cycle

The first step of the PDCA-cycle encompasses the analysis of the current situation of the process, where possibilities for improvement as well as the challenges raised are identified. When a plan has been established should it be executed and data be continuously collected,

which is in line with the second step (Silva et al. 2017; Sokovic et al., 2009; Verboven & Vanherck, 2015). The MNCs seem to use the PDCA-cycle when implementing sustainability. We believe this since we have evidence that the MNCs have identified opportunities and challenges related to sustainability before the implementation phase and also have planned and consciously set a direction for improvements related to sustainability. Both short- and long-term targets have been established to set a clear direction and data is collected using KPIs, scoreboards and tools.

The third step, Check, correspond to the analysis of the performed sustainable actions (Verboven & Vanherck, 2015). In this case, the studied companies rely on their KPIs and scoreboards designed in the former step. Such tools allow to efficiently measure the results and compare them to the expected ones (Silva et al., 2017). The literature suggests that using an external part to validate sustainable performance may increase a company's trustworthiness and transparency (Verboven & Vanherck, 2015). One company that mentioned using external audits was Tetra Pak. The company's process of sugarcane plantation and bioethanol production for plant-based plastic packaging is audited by the certifier Bonsucro. Mr. Lindroth considers that important improvements have been made using the compliance of this certification, since it ensures a robust responsible supply chain.

The last step of the PDCA-cycle, Act, refers to the actions undertaken to standardize or incorporate satisfactory sustainability practices (Silva et al. 2017; Verboven & Vanherck, 2015). Our empirical findings indicate that the MNCs follow up implemented activities and feed the knowledge back from them into the organisation. For instance, IKEA has a risk management process to identify, review and mitigate risks through a continuous cycle. Stora Enso closely monitor set targets and implemented actions where unsatisfactory results are taken very seriously and are dealt with promptness. Thus, practices can be consolidated through standardization and improve quality related to sustainability over time. The above reasoning further confirms the importance of continuous improvement in the conceptual framework (Figure 2).

The PDCA-cycle is not merely a tool companies can use, but a philosophy that should be embedded within the organisational culture to fully function (Silva et al., 2017). Two of the MNCs have even tried to enhance the culture of continuous improvement by adopting specific names to the process. Tetra Pak refer to World Class Manufacturing principles, which helps to

systematically apply continuous improvement within the company. SSAB has an internal approach called SSAB One. By referring to the processes of improvement it arguably becomes more tangible and easier to convey to all co-workers. Continuous improvement is thus easier embedded within the organisational culture (Silva et al., 2017) On a similar note, the MNCs have adopted codes of conduct when working with suppliers. Audits and monitoring is done for all companies to ensure supplier compliance and sustainability performance. Although all MNCs try to help suppliers to comply with set standards and to some extent practice continuous improvement within this part of the value chain, some MNCs seem to engage more than others. IKEA works with suppliers through IWAY which is the company's Code of Conduct. IWAY-related competence is continuously improved through training programmes, helping co-workers to more effectively communicate and assist suppliers. In 2020 a new version of IWAY will come out that focuses more on continuous improvement which will enable IKEA to further help suppliers to continue to improve social and environmental aspects as well as increase transparency along the supply chain. Doing so can be connected to Venkatraman and Nayak (2010), who mean that engaging suppliers in systems and decisions related to sustainable matters can lead to greener supply chain systems and increased transparency.

5.3.2 Identification of the underlying principles

One premise in the conceptual framework is that the three underlying principles of TBL, innovation, integration and interdependence, are considered by MNCs when implementing sustainability practices through continuous improvement. The literature states that the principles can be used to prepare and facilitate the way for continuous improvement of sustainability in a well-structured and systematic way (Venkatraman & Nayak, 2010). The authors of this study have however not found enough evidence that the three underlying principles are explicitly considered by the MNCs and cannot confirm that they actually facilitate continuous improvement of sustainability as presented in the conceptual framework (Figure 2). Lack of such findings might be because reality is more complex and subtle than the underlying theoretical models or principles, making it hard to identify or separate the theoretical origin of practices. However, the principles might still be integrated implicitly by the MNCs and be present throughout the process of continuous improvement. Some evidence of this has been found and is presented below.

The underlying principle of innovation seems to be present when Tetra Pak had to adhere to more stringent regulations presented by EU regarding plastic straws. Nidumolu & Rangaswami

(2009) state that if companies only adhere to the lowest possible environmental regulations, they will probably have a hard time adjusting when regulations get stricter. It is therefore recommended by Nidumolu & Rangaswami (2009) to go a step beyond minimum compliance by fostering innovative practices before stringent regulations comes into force. Tetra Pak was caught of guard when EU legislation banned the use of plastic straws in 2019 and had to quickly modify its operations to adapt to paper straw production. The authors of this study believe that such sudden readjustments could have been avoided if Tetra Pak had decided to develop more environmentally friendly straws before regulations forced it upon the company. Such statement relies on the fact that Mr. Lindroth explained that switching to paper straw was a robust investment that Tetra Pak had no intention to undertake.

The second underlying principle is integration, which entails how systems and people are integrated to facilitate for social and environmental considerations along the whole supply chain (Venkatraman & Nayak, 2010). Some evidence of integration is visible in Tetra Pak's partnerships. The company sometimes struggles to consolidate information for recycling-rate calculations since collecting data from different sources is a hard step that requires time and resources. To exemplify, Tetra Pak struggles to attain information of the volume recycled from different actors to further consolidate the numbers. Despite being a challenge, Tetra Pak works closely with its partners to increase recycling rates through knowledge-sharing and commitment. Thus, mutual commitment between the actors, good communication and information flow can to some extent facilitate and ensure that sustainability implementation is present within partnerships (Venkatraman & Nayak, 2010).

The underlying principle of interdependence refers to that organisations are interdependent of each other. To mitigate risks related to environmental, social and economic areas, organisations should foster partnerships, shared knowledge and regulation compliance (Venkatraman & Nayak, 2010). There are some indicators that interdependence is present within two MNCs, SSAB and Stora Enso, through their partnerships. The HYBRIT initiative between SSAB, Vattenfall and LKAB was launched for sustainability purposes, in this case becoming fossil-free by 2026. Thus, environmental incentives can also be a motivation for partnerships and common projects, and it is fair to believe that MNCs partner with other companies who share the same objectives related to sustainability. A feature regarding Stora Enso's partnerships is that the two companies, Veracel and Montes del Plata, which are the other parties in the company's joint-operations neither follow Stora Enso's sustainability practices nor is measured

by its sustainability teams. Stora Enso could consequently face challenges aligning sustainability objectives with its partners but has tried to mitigate this risk by participating in Veracel's and Montes del Plata's board meetings and there discusses sustainability. Actions are always taken when lack of compliance arises such as managers dealing with unsatisfactory results and implementing relevant certifications. To ensure a certain degree of alignment, Veracel mill is certified with FSC and PEFC, which are certifications that assure a sustainable forest management, taking into consideration deforestation and biodiversity protection. The authors of this study believe that by participating in Veracel's and Montes del Plata's board meetings Stora Enso has the possibility to detect if their partners have deviating ideas about how to implement sustainability or do not practice continuous improvement. Also, working closely with its partners and make sure they are certified helps Stora Enso assure a certain extent of sustainability alignment.

To summarize the analysis of continuous improvement, there is strong evidence that the MNCs in one way or another practice continuous improvement and seem to recognize the importance of constant evolvement. The steps of the PDCA-cycle seem to be undertaken which helps to consolidate practices through standardization and improve quality related to sustainability over time. Not enough evidence was found that the three underlying principles of TBL, innovation, integration and interdependence, are explicitly considered by the MNCs. Thus, it cannot be confirmed that they actually facilitate continuous improvement of sustainability. However, the principles might still be integrated implicitly by the MNCs and be present throughout the process of continuous improvement. Some evidence of this has been found.

6. Conclusion

This chapter will present a conclusion based on the analysis made in the previous chapter and answer the study's research question "how do MNCs implement sustainability within their value chains using continuous improvement?". Also, a revised conceptual framework will be presented and discussed. Lastly, limitations of the study and suggestions for future research are outlined.

The purpose of this study has been to answer how MNCs implement sustainability within their value chains using continuous improvement. Five MNCs have been analysed through a multiple case study to provide a deeper understanding of how the three concepts of sustainability, value chain and continuous improvement are interconnected. Based on these theoretical themes a conceptual framework was created which later was revised to more accurately fit empirical findings based on primary and secondary sources.

The result of this study shows fairly strong evidence that MNCs implement sustainability within their value chains using continuous improvement.

Regarding sustainability, results show that for many MNCs was sustainability initially seen from a risk mitigation and compliance approach, instead of a voluntarily matter to address. At this point in time, the economic dimension was of great importance, when companies mostly focused on being resource efficient and productive. When environmental and social values gained importance were the MNCs able to view efficiency also from these dimensions and create competitive advantages through sustainability. Thus, companies now strive to integrate the economic, social and environmental dimensions of the TBL to achieve more sustainable-oriented practices in their value chain. However, sustainability seems to be mainly interpreted from an environmental perspective, which might derive from general interest of corporations, society and stakeholders. There is also some evidence that time and resource constraints undermine the process to incorporate sustainability in the value chain regardless of the size of a company. Such findings contradict literature that suggests that it is usually SMEs that experiences such constraints (Baumann-Pauly et al., 2013; Udaysankar, 2008).

The MNCs have within their value chain used the steps of the VCA, although not in order. This do not however seem to have been a major impediment since the outcome of analysing the

value chain has still been to create sustainable value. Also, the MNCs integrate sustainability to some extent along the whole value chain. Thus, implementing sustainability does not seem to be limited to certain value chain activities but implemented with the aim to affect all parties within it. Out of the five companies in the study, only one seems to try to go beyond its own value chain and address a larger climate footprint. The result from analysing the value chain feeds into continuous improvement which is done at several levels within the MNCs and monitored by some type of sustainability board at the top of the organisation. The PDCA-cycle facilitates consolidation of sustainable practices through standardization and improve quality related to sustainability over time. Stakeholders possess a high level of importance when implementing sustainability along the value chain and the exchange of information with them is particularly important.

The three underlying principles of the TBL, namely innovation, integration and interdependence, are not explicitly considered by MNCs when implementing sustainability practices through continuous improvement. Hence, it cannot be confirmed that they actually facilitate continuous improvement of sustainability. Nevertheless, they may be implicitly included by the MNCs along the process of continuous improvement.

To conclude, earlier studies have primarily examined sustainability in relation to the value chain (Fearne et al., 2012; Kim & Kim, 2016; Balkau & Sonnemann, 2010) or the importance of continuous improvement when implementing sustainability (Asif et al., 2010; Muñoz et al., 2013; Venkatraman & Nayak, 2010; Pojasek, 2012). However, many studies have failed to see the interconnection between the three concepts which we identified as a research gap worthy of further investigation. Our study has adopted a more holistic perspective and contributed to the academic literature by tapping into the lacking field of research that looks at sustainability, the value chain and continuous improvement in the same study. Thus, a deeper understanding of the interplay between the three concepts, value chain, continuous improvement and sustainability has been reached.

6.1 Revised conceptual framework based on the conclusion

The conclusion shows that some result of the study is supported by our conceptual model (Figure 2). As mentioned before, the conceptual framework rests on a few premises which will now be compared to the empirical findings.

As a first premise it was assumed that the MNCs consider sustainability as important and have the goal to increase their sustainability performance. If not, there would be little reason to study how they have implemented sustainability. The empirical findings show quite clearly that the importance of sustainability is present within all the MNCs in the study. Given the short-and long-term goals related to sustainability, such as the ones related to reduction of CO₂ emissions, all companies seem to want to improve their sustainability performance.

The second premise was that the result of the VCA feeds into the cycle of continuous improvement and the PDCA-cycle. The empirical findings indicate that all five MNCs have thoroughly considered their value chain when implementing sustainability and seem to have done this repeatedly by considering the three dimensions and VCA. Although not all MNCs specifically mention VCA, indicators in their answers suggest that they are conducting VCA partly or fully. Both VCA and PDCA have shaped the implementation of sustainability, with VCA being done as an initial step, followed by continuous improvement being performed within relevant areas of the value chain. The process of analysing the value chain and apply continuous improvement is repeated over and over, hence emphasizing the interaction between the two concepts.

The third premise, the presence of the three underlying principles of the TBL, does not seem to be supported as much by the model as we initially thought. The authors of the study have not found sufficient evidence that these concepts are explicitly contemplated by the MNCs and can therefore not affirm that they actually facilitate continuous improvement of sustainability. Still, the principles might be integrated implicitly by the MNCs and be present throughout the process of continuous improvement.

Consequently, the conceptual model created by the authors shows that the MNCs implement sustainability within their value chains using continuous improvement. Since not enough evidence has been found that the three underlying principles are explicitly considered by the

MNCs, we have revised the model to better fit the studied reality. Although we cannot affirm that the principles actually facilitate continuous improvement of sustainability, they can still be considered implicitly by the MNCs and be present throughout the process of continuous improvement. Therefore, the arrow in the model has been shaded, illustrating the implicit consideration of the underlying principles. Thus, a more accurate conceptual model is provided (Figure 3).

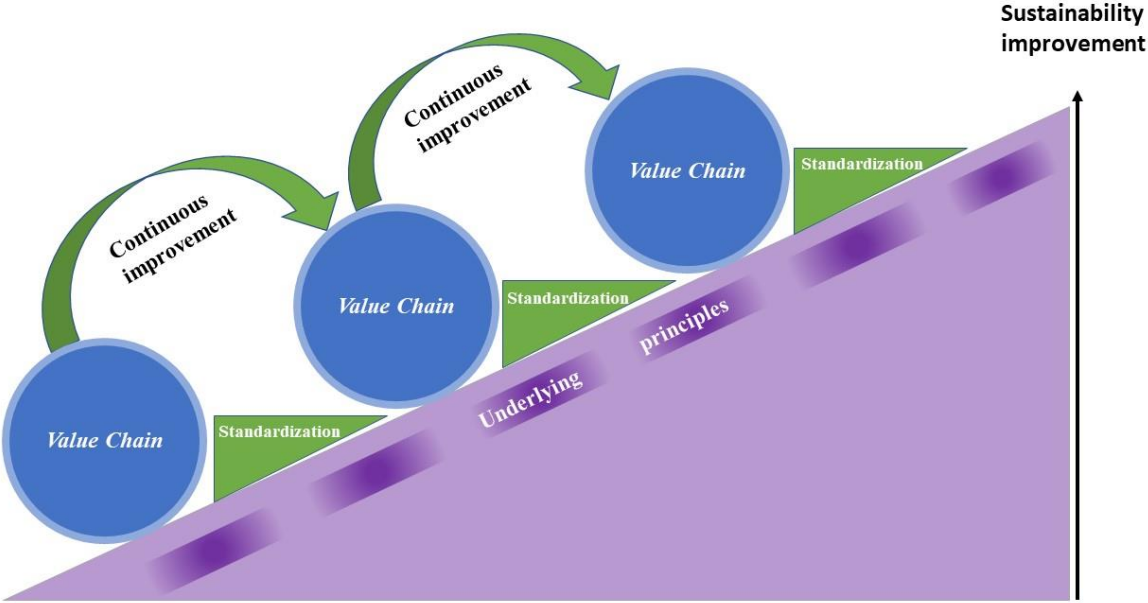


Figure 3: Revised conceptual framework compiled by authors

6.2 Managerial implications

Findings show that the value chain and continuous improvement are of high importance when implementing sustainability and should be acknowledged by managers. VCA should be used to identify opportunities and challenges related to sustainability where the results should be used within the cycle of continuous improvement. Revising sustainable practices should take place at all levels of the company. This way knowledge can be fed back into the organisation and improve sustainability over time. Managers also need to recognize the importance of stakeholders and ensure their views and priorities are taken into consideration. By doing so value can be created for customers and consumers that they are prepared to pay for. In order for sustainability to capture as many activities as possible, it should be integrated along the whole value chain and all three dimensions of the TBL should be considered as well. Thereby a holistic way of looking at sustainability can be built. Another recommendation for managers is to make

sure that top management is committed since their help and work will facilitate the implementation further down in the organisation.

6.3 Limitations and future research

This study has tried to integrate the concepts of sustainability, value chain and continuous improvement to examine how the last two are considered when implementing the former. However, as stated in *1.6 Delimitations*, the researchers did not look further into the operational features of sustainability implementation. Nevertheless, the operational features should be further investigated to gain more insight into how value chains and continuous improvement are considered when implementing sustainability. A narrower study focusing on more operational features could benefit further research. Another aspect of this study is that it uses MNCs from different industries which do not provide a deeper understanding of a specific industry. Future studies could focus on one industry to see if there are any industry-related characteristics when implementing sustainability.

The three underlying principles of the TBL have not proven to be as necessary as the literature suggests facilitating continuous improvement of sustainability. There was no evidence found that the principles are explicitly considered by the MNCs and can therefore not confirm that they actually facilitate continuous improvement of sustainability. As a suggestion, future research could more closely investigate if there are any correlation between them and continuous improvement.

Lastly, another feature for future research is that there are other tools used in value chain and continuous improvement that are considered in the literature, such as Value Stream Mapping and Life-Cycle assessment. Thus, it would be interesting to examine how they relate to VCA, the PDCA-cycle and implementation of sustainability.

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7.1 Interviews

Collander, K. Head of environmental affairs (Skype interview on the 2nd of April 2020).

Reid, C. Sustainability development manager (Skype interview on the 15th of April 2020).

Hörnfeldt, T. Vice President of Sustainability and Public Affairs (Phone interview on the 5th of May 2020).

Lindroth, E. Environmental director (Skype interview on the 15th of April 2020).

Widlund, T. City mobility director (Phone interview on the 21st of April 2020).

Appendix 1

Interview guide

General questions

- Name
- Country of origin
- Years employed within the company
- Role and areas of responsibilities
- How long have you worked within the area of sustainability (within the company and in total)?

Questions related to sustainability

- When you started, what was it that struck you most about the way the MNC worked with sustainability?
- Can you tell us how the work has evolved during the years?
- Which steps have been the most important ones to reach where you are today?
- When implementing your sustainability policies, do they have a global scope?

Questions related to the value chain

- To what extent has sustainability been incorporated within your regular business planning activities?
- Can you tell us about how you view the value chain and how you use it in relation to sustainability?
 - Have you used the value chain to identify value within the company?
- What parts within the value chain are of most importance to you?
 - Is it there that you have focused most of your sustainability work?
- Before you implemented sustainability, did you analyse the activities performed along the value chain to identify what parts of the company where sustainability would be implemented?
- Did you analyse opportunities and challenges within your value chain that could be used to create sustainable value?
 - if yes, how come?
- After identifying the most important aspects of your value chain, did you try to involve all members of the value chain to identify opportunities and challenges that could be addressed (customers, suppliers etc?)
 - If yes, how?
- How have external factors influenced you regarding the implementation of sustainability?
- Are long-term targets broken down into short-terms?
 - Are both long-term and short-term goals formulated at a global level or regional level?

Questions related to continuous improvement

- Are you familiar with the continuous improvement?
 - If no, is there another type of way you use for the process of implementing sustainability?
- If yes, have you actively tried to use the cycle when implementing sustainability?
- How are implemented activities followed up? Is it done globally or at a regional level?
 - What challenges are involved with doing so globally/regionally?
- How do you evaluate your actions regarding sustainability?
- How do you collect data related to the implemented actions?
- Are implemented activities later reviewed and compared to the earlier set targets?
- Is the assessment performed at a global level or locally?
 - If locally adapted, is this something that makes reviewing harder?
- How is gained knowledge incorporated to evolve sustainability efforts after revising the implemented actions? *(To clarify: how do you feed back the experiences learned from previous activities to further improve them?)*
- If an initiative has reached unsatisfactory results, is the idea usually revised or discarded?
 - If the idea is revised, can you give us an example of how the process would be in this case?