



**LUT School of Business and Management**

Bachelor's thesis, Business Administration

Supply management

**Integration of Sustainability Procedures in the Procurement Process of a Company**

**Vastuullisuusmenetelmien integrointi yrityksen hankintaprosesseihin**

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Author: Emma Korhonen

Supervisor: Elina Karttunen

## **ABSTRACT**

**Author:** Emma Korhonen  
**Title:** Integration of Sustainability Procedures in the Procurement Process of a Company  
**School:** School of Business and Management  
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**Supervisor:** Elina Karttunen  
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The purpose of this bachelor's thesis was to examine how sustainability methods could be integrated into a company's procurement process, and mainly its supplier selection stage. This was inspected from both a social and an environmental point of view. This thesis was made for an industrial company and the procurement object was chosen to be batteries. The research is a qualitative case study and content analysis was used in the empirical section.

Many companies do not produce their products completely themselves, but rather outsource components from other operators. Procurement has a significant effect on the comprehensive level of sustainability of the company. Different stakeholders can create pressure on the company to operate in the most sustainable way possible in areas of economical, social and environmental sustainability.

Batteries can often contain so called conflict minerals, such as lithium and cobalt. This name stems from the fact, that the profits earned from them are used to fund different kinds of criminal activities, such as the use of child labour and arms trade. Company A wants to avoid purchasing batteries containing said minerals. This is challenging, because during the process of manufacture of batteries, the minerals go through multiple intermediates, which makes tracking them difficult. This thesis researches how purchasing these could be avoided or the amount purchased minimized in Company A.

## TIIVISTELMÄ

<b>Tekijä:</b>	Emma Korhonen
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Tämän kandidaatintutkielman tarkoituksena oli selvittää, kuinka vastuullisuusmenetelmiä voisi integroida yrityksen hankintaprosesseihin, erityisesti toimittajavalintaan. Työ on tehty teollisuusalan yritykselle ja hankinnan kohteena toimi akut. Tätä tarkasteltiin sekä sosiaalisen että ympäristöllisen vastuullisuuden kannalta. Tutkielma on kvalitatiivinen tapaustutkimus ja sen empiriaosuudessa on käytetty sisällönanalyysiä.

Monet yritykset eivät tuota kaikkia tuotteitaan täysin itse, vaan usein hankkivat siihen komponentteja muilta toimijoilta. Hankinnoilla on suuri vaikutus yrityksen kokonaisvaltaiseen vastuullisuuden tasoon. Erilaiset sidosryhmät voivat asettaa yritykselle paineita toimia ja hankkia mahdollisimman vastuullisesti; taloudellisella, sosiaalisella ja ympäristöllisellä tasoilla.

Akut sisältävät usein niin kutsuttuja konfliktimineraaleja, kuten litiumia ja kobalttia. Näiden kutsumanimi tulee siitä, että niiden tuotoilla rahoitetaan erinäistä rikollista toimintaa, kuten lapsityövoimaa ja asekauppaa. Yritys A halua välttää akkujen, jotka sisältävät näitä mineraaleja, ostamista. Tämä on haasteellista, koska akun valmistusprosessin aikana nämä mineraalit voivat mennä monen välikäden kautta, jonka vuoksi niiden jäljittäminen on vaikeaa. Tämä tutkielma tarkastelee, kuinka Yritys A voisi välttää tai minimoida hankitun määrän näistä mineraaleista.

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## 1.Introduction

Globalization of commerce and its effects on economy are still a relatively recent phenomena and due to this not much research and literature on the topic exists. For a significant time period commerce was seen as a local and national process, but midway of the 20th century its effects were truly noticed and documented. (Alexander 1977) Due to companies having vast networks, only a minority of the companies handle everything from production to marketing. Companies focus on their coreactivities and co-operate or outsource activities they should not produce themselves. (Nosoohi & Nookabadi 2016)

Consumers and stakeholders are becoming more aware of social and environmental sustainability and thus criteria for supplier selection has expanded beyond net price. Consumers can include individuals or businesses purchasing the product or service in question. (Balderjahn, Peyer, Seegebarth, Wiedmann & Weber 2018) Due to consumers being more aware, companies are faced to adapt and become more responsible and sustainable. This means that sustainability should become a significant part of the company's operation, including procurement. (Meehan & Bryde 2011)

Sustainability as a concept in the corporate world only emerged in the 1960s as concern towards the degrading environment and poor resource management began growing. As sustainable business became a global concern, OECD (abbreviation from the words Organisation for Economic Cooperation and Development) was founded to help achieve the communal goal of "sustainable economic growth and employment in member countries in order to stimulate employment and increase living standards". (McKenzie 2004) As of 2020 there are 37 member states, representing 5 different continents. These countries represent a significant part of both the World's population and trade, noticeably the latter. OECD countries represent around 17 per cent of the World population, but over 50 per cent of the global Gross Domestic Product (GDP). (OECD 2012 & 2014)

### **1.1 Topic and goals of the research**

The topic of this research will examine sustainability in a case company's (Later Company A) procurement process and how it could be integrated more in the future. Sustainability will be examined utilizing Elkington's (1994) Triple bottom line model. This model suggests that sustainability consists of three factors; economic, environmental and social. Due to the scale of this research, the latter two will have a larger emphasis. In order to not have a too vast of a topic, the subject of procurement was defined to be batteries. This was chosen, because some batteries can include conflict minerals and Company A wants to actively avoid purchasing these kinds of batteries. More about batteries and conflict minerals will be explained in chapter 4. This topic is important and thus researched, because Company A want to implement more sustainability in their procurement process, avoid buying products containing these minerals as well as work in an environmentally sustainable way. Sustainability is also an ever-growing trend in the corporate world overall as well as procurement (Institute for Sustainability).

The goals of this specific research are to offer the reader a comprehensive theoretical section and empirical study. The theory is divided into two separate sections, the first one being about procurement processes and the second one about sustainability in procurement. The empirical section will build on the theoretical section and affiliate this theory and research to the corporate world and information acquired during this research.

### **1.2 Research questions**

This research will have one main research question and two sub-questions. Summarized answer to each of these will be given in the fifth and final chapter of this thesis. The main research question goes as follows:

*How can sustainability measures be integrated in to the supplier selection stage of a procurement process?*

The two sub-questions will focus on the two areas of sustainability, environmental and social, focused on in this research.

*How can environmental sustainability measures be taken into account when purchasing batteries?*

*How can social sustainability measures be taken into account when purchasing batteries?*

In this research, these questions will be answered bearing Company A and their operations in mind. All of the knowledge garnered during the research will be concluded in the fifth and final chapter and each question will be answered in a summarized form, beginning with the sub-questions and finishing with the main research question.

### **1.3 Research methods**

This research will be conducted as a qualitative research both due to the nature of the study as well as the low number of samples. Qualitative research has varying definitions, as it does not have its own theory. Qualitative data can be collected using varying different methods, such as interviews and observations, making the definition even more difficult to define. (Metsämuuronen 2008)

The data used in the empirical section will be collected using interviews concerning employees of Company A. The interviews will be semi-structured, also called theme interviews, meaning that questions will be planned ahead, but complementary questions may be asked if they are thought to be necessary by the interviewer. Semi-structured interviews also give the interviewer the freedom of changing the order if they feel necessary to do so. (Eriksson & Kovalainen 2016) The conducted interviews will be recorded and transcribed. Transcription of the interviews is done in order to have the interviews in a literal form. This makes it easier to analyse the results of the interview during the research process. (Tuomi & Sarajärvi 2018) In addition to interviews, Company A's websites, sustainability reports, Supplier Code of Conduct

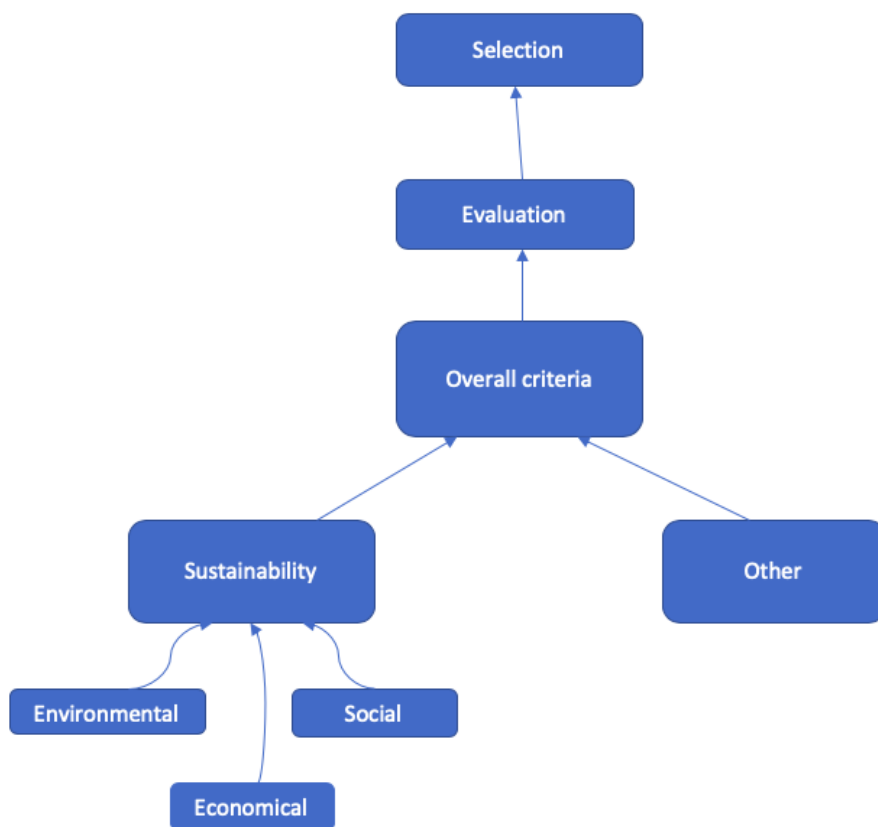
and corporate strategy will be used to gain more information about Company A and its operation. Gained information will be compared to existing literature about sustainable procurement.

#### ***1.4 Limitations and theoretical framework***

As a bachelor's thesis is not a very extensive research, some limitations were made to ensure the topic would not be too vast. These include focusing the research of sustainability to predominantly environmental and social aspects and focusing the empirical section on the supplier selection part of the procurement process as the whole process consists of multiple steps. The whole process is explained in the theory though, to give the reader a better understanding of the process. Like most companies, Company A purchases many different types of products and services, so sustainability measures used in the procurement of a specific product or service, can not necessarily be applied to that of another. Due to this and the scale of this research, a specific procurement subject was chosen. This product is batteries, as suggested by Company A, due to the fact that they use batteries as they further manufacture larger entities. These subcontracted batteries pose the risk of containing so called conflict minerals that Company A wants to avoid purchasing.

The theoretical framework of this research consists of different criteria used in supplier selection. The overall criteria can be divided into sustainability and other. This is only one of the ways of dividing the overall criteria, but dividing it like shown below, was the most sensible way keeping in mind the topic of this research. Sustainability criteria can be further subdivided into economical, environmental and social according to the Triple bottom line model (Elkington 1994). The others criteria can consist of multiple aspects, such as net price, quality and delivery (Weber, Current & Benton 1991). There are multiple research made about these criteria and their importance, of which a few will be introduced in the literature review.





**Figure 1** Theoretical framework of the research

### ***1.5 Literature review***

Literature about procurement process exists in a rather large scale. As the process consists of multiple stages, they can be grouped to form different groups. There exists multiple views on what these stages should be. According to van Weele (2014) the process can be divided into two stages, tactical purchasing and order function. The three substages of determining specification, selecting supplier and contracting form tactical sourcing. The latter two can be collectively called sourcing. (van Weele 2014) Nicoletti (2018) suggests that procurement process can be divided into three stages; strategic, tactical and operational, of which the latter two are quite similar to that of what van Weele (2014) argues.

Literature about supplier selection and its criteria has existed for decades now. Dickson's (1966) research about vendor selection criteria and their importance is widely considered to

be the first of its kind. His research was followed by multiple similar ones, including ones by Weber et al. (1991) and Benton and Whybark (1982). These researches suggest, that net price is a criteria of very high importance and thus contradict Dickson's (1966) study. According to Dickson's research the criteria of highest importance were quality, delivery and performance history. Even though conducted in the 1960s, Dickson's research included criteria, that could be considered to be a part of sustainable criteria, such as Labor relations record, but it was considered by him to be at a low level of importance. The criteria with the highest level of importance in different researches will be discussed more in chapter 3. There is no absolute method to choosing a supplier, as the importance of each criteria and what is valued varies between companies and even within companies according to the subject of procurement. (Chou & Chang 2008) Sustainability and its role in procurement is a more recent topic in scientific literature. According to Millington (2008) social and environmental sustainability in corporations is a 21st century phenomena. As the topic in question is fairly recent, more recent literature was preferred, emphasizing the last decade.

### ***1.6 Key concepts***

Procurement process: The process of procurement varies greatly between companies and depending on the product or service being purchased. According to Nieminen the six different stages of procurement can be generalized to fit most companies and their procurements. (Nieminen 2016) These stages will be discussed more in the subchapter 2.1. of the final research.

Supplier selection: Second stage of the procurement process and by this point the need for the product or service has been established. If no contracts exist, possible suppliers will be compared using the criteria chosen by the company. (Nieminen 2016) These criteria can be a mixture of other and sustainability like shown above.

Corporate sustainability (CS): As defined by Klaus Zink, corporate sustainability is the transfer of the overall idea of sustainable development into business level (Zink 2008). These sustainability actions are voluntary by nature show inclusion of both social and environmental

concerns in both business operations and with interactions with stakeholders. (van Marrewijk Werre 2003)

Triple bottom line -model (TBL): The concept of triple bottom line -model was first introduced by John Elkington in 1994 (Longoni 2014). According to Elkington himself a business can be considered sustainable once it lives up to the triple bottom line. In other words the company should showcase economic prosperity, social justice and environmental quality. (Jeurissen 2000)

Sustainable supply chain management: Can be defined as the set of policies regarding supply chain management, actions taken and relationships formed in response to concerns about environmental and social sustainability. These policies can be related to, for example, distribution, reuse, production and disposal of the company's services and products. (Tseng, Lim & Wong 2015)

### ***1.7 Structure of the research***

This research consists of five main chapters, the first being the introduction. The introduction presents the reader with the topic as well as some background information. In addition existing literature about the topic is reviewed as well as the theoretical framework being introduced. The second chapter will be the first of the two theory chapters. It will introduce the reader to the concept of procurement process and its stages, giving emphasis to the supplier selection stage. The third chapter will discuss sustainability and the two areas, environmental and social, focused on in this research. In addition to social and environmental sustainability, strategic corporate responsibility and sustainable supply chain management will be covered.

The fourth chapter will give more information about Company A and the procurement subject of batteries. This chapter will present and discuss the qualitative research conducted during research as well as possible ways of improvement for Company A are conversed. The fifth and last chapter will conclude the results from the empirical research and discuss them linking

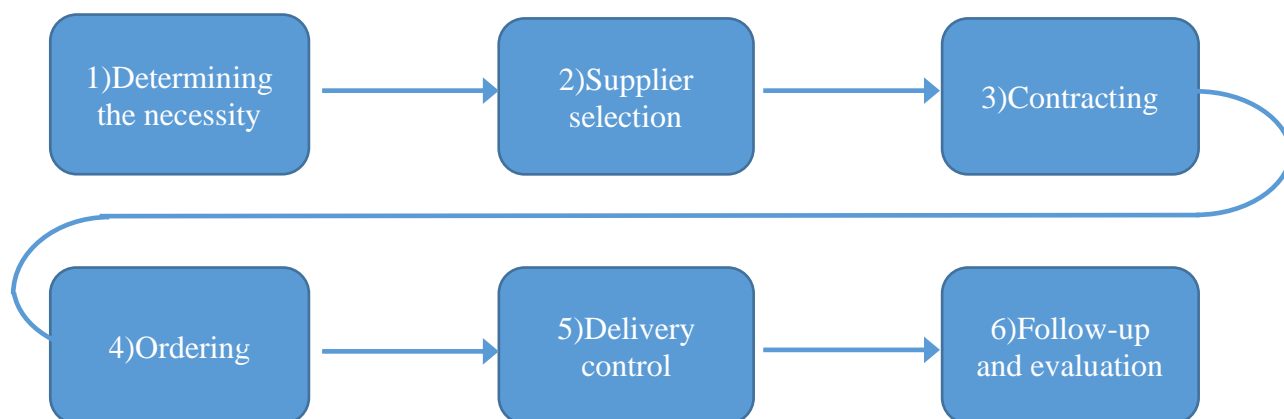
them to the theoretical section. In addition the research questions will be revised and answered based on the knowledge gained from the research.

## 2. Procurement process

Procurement process and the definitions of its stages seem to divide opinions. Nicoletti (2018) suggests that it is the process of three different flows; information, physical and financial, between two separate parties. According to him the process starts from the requirements of an internal customer and ends with the final payment and acquisition of goods. Van Weele (2014) suggests that the process is actually lengthier, ending at follow-up and evaluation. Nieminen (2016) also argues that the process does not end, when the product or service is paid for and received, but rather when the follow-up and evaluation are conducted. Both van Weele (2014) and Nieminen (2016) agree with Nicoletti that the process of procurement starts with determining the necessity.

### 2.1 Phases of the process

Nieminen presents the idea that procurement process consists of the six following stages; Determining the necessity, supplier selection, contracting, ordering, delivery control and follow-up and evaluation. Van Weele suggest the same six phases, where the latter five compose procurement, all six purchasing, the first three tactical sourcing and latter three order function. This is shown in Figure 2 below.



**Figure 2** Stages of a procurement process Nieminen (2016) and van Weele (2014)

Determining the necessity sets the way for the rest of the procurement. The determination can vary from just the product needed to having an exact model and manufacturer. The less determined the end product is, the more freedom there is for supplier selection criteria. (Swift 1995) Practical determination is such that only determines the mandatory and significant criteria. This allows for the company to look for the best option from the supplier market. When purchasing a product, qualitative specification is also present as a part of determination of the necessity. (Nieminen 2016)

The second stage is commonly thought to be supplier selection, in older literature often called vendor selection (van Weele 2014). The first stage of supplier selection is to examine, whether or not a contract exists for this specific type of procurement. If this contract does not exist, a new one should be generated. If a contract does not exist, a supplier will be selected in this second stage of procurement. After this is done, the selection must be made official by making a contract concerning all parties involved. This is the third stage of procurement, contracting. A contract is not always needed as at times an order confirmation can serve as the contract. (Nieminen 2016) Contracts are made to ensure that all parties involved abide to the clauses agreed and so do not breach the contract. In procurement the most common breach of contract is maverick buying. This means purchasing a product or service even though the company has a contract for buying said product. There are different types of maverick buying, some unintentional and some not. (Karjalainen, Kemppainen & van Raaij 2009)

If a new contract is necessary, appropriate legislations must be taken into account. A legislative that applies to all contracts in Finland and that is Law of Property Juridical Transactions (1929/228). Different legislations that can affect contracts depend on the field of business as well as the procurement type. Examples of these legislations in Finland include Copyright Law (1961/404) and Drug Regulation Act (1987/693). The clauses in contracts are especially important in B2B-sales as corporations do not have Consumer Protection Law by their side, like individual consumers do. (Nieminen 2016) It should also be noted that a verbal contract is legally as binding as a literary one, but the latter one should be used as it serves as concrete evidence in case of dispute. Contracts should have a clear structure and denote clauses and compensations with clear dates when the contract starts and expires. A contract can also be open-ended, meaning that it is effective until it is actively terminated by a party involved.

These are less common in the corporate world. (The World Bank 2018) In order to make the procurement process more efficient, prefabricated layouts are often used and only the details concerning the specific contract are changed (Nieminen 2016).

Ordering is the fourth stage and the first stage of both order function and supply stage (van Weele 2014). This is the point of the process that the supplier is given the information, that they are used and details of the purchase. These can include for example, what products are wanted and by what date. In order to avoid buying multiples of the same product, supplying them from the same supplier can be beneficial as they can hold a records of what has already been purchased. Information flow inside a company's procurement department can be lacking or inefficient especially, when the company in case is a large company purchasing multiple different types of products and services. (Nieminen 2016) Terms of delivery are indicated using the most recent Incoterms delivery clauses. Currently the most recent Incoterms is the Incoterms 2020 edition, published in 2019. Incoterms are procurement clauses published and trademarked by the International Chamber of Commerce, often abbreviated as ICC. They are in global use and translated into 29 different languages, making them efficient to use with international suppliers as well. The abbreviations are simple and wide-spread making them popular in use. (International Chamber of Commerce)

Automating ordering routine purchases has become an ever increasing trend. This is due to the fact that often the products purchased are both small in value and purchased often. By purchasing these products manually each time, could make the procurement of the product more expensive than the product itself, making the process highly inefficient. Automatization makes for a large instalment, when first purchased, but can save the company money in the long run. This does not apply to one-time orders as many different variables have to be taken into account and criteria have yet to be specified. (Ghadimi, Ghassemi, Toosi & Heavey 2018)

The fifth stage of the procurement process is widely agreed to be delivery control. Nicoletti (2018) argues that the procurement is finished by the time the product purchased reaches the orderer, meaning that he considers this to be the final stage of procurement. Delivery control, the fifth stage, is not necessarily needed, if everything goes according to plan. This is done to ensure that the purchased products or services are delivered and that the amount, quality,

price and delivery time correspond to the ones on the contract and checking that the basic requirements are fulfilled by the supplier. (van Weele 2014) Delivery control can also entail checking that all reports needed are included in the delivery. This stage also includes checking up on the suppliers and products or services, to help make the best possible supplier selection the next time. Solving different issues regarding the delivery and product or service is one of the main objective of delivery control. If an issue is detected during these stage, a reclamation should be made without delay. (Nieminen 2016) The last and final stage of procurement, according to both Nieminen and van Weele, as well is follow-up and evaluation. This evaluation should be executed systematically in order to be used to improve the whole procurement process making it more efficient.

## ***2.2 Supplier selection***

As mentioned before, supplier selection is the second stage of the procurement process and part of the tactical purchasing. By this stage, the target of the procurement should be clear and so the question is from who will the product or service be purchased. The first step is to ensure, whether there are existing contracts for this type of procurement. If not, a market survey should be made to gain knowledge of the markets and what they offer. (van Weele 2014) It is worth noting that sticking with the same supplier and renewing contracts may not necessarily result in the most efficient procurement. So investing time and human resources into finding the best possible vendor can pay itself back in the form of a both efficient and sustainable procurement. (Nieminen 2016)

As showcased in the theoretical framework of the research, supplier selection criteria can include multiple variables. One being sustainability and its different elements, which will be talked about more in Chapter 3 and its subchapters. The so called other criteria can include many different things, and no consensus has yet to be formed on which should be used and on their importance. Multiple researches have been conducted on the topic, the first major one being by Dickson in 1966. He examined different criteria and their importance. He then placed the criteria in order of importance and ranked them ranging from very high importance

to low importance. According to Dickson (1966) the most important criteria, all of very high importance, are quality, delivery, performance and warranties and claims policies.

The most notable thing about Dickson's study (1966) is that price is only considered to be the sixth most important factor and of great importance instead of very high. This contradicts many studies that followed his, such as ones made by Weber et al (1991), Banerjee (1986) and Benton (1983) that highlight net price as the single most important factor in supplier selection. Due to the fact that most of these studies were conducted in the 20th century, they do not place a significant emphasis on sustainability. This can be noted both in Dickson's research (1966) as well as in Weber et al. (1991) article. The first one has examined 23 criteria, out of which only two can be classified as sustainability criteria. These two being Labour relations record and Training aids. Out of 23 criteria these two placed on places 19 and 22 and were considered to be only of medium importance. Selecting the supplier is a key component in the sustainability of the procurement. This is due to the fact that overall sustainability and the level of sustainability of the specific product is dependent on how sustainable its components are. (Kähkönen, Lintukangas & Hallikas 2018)

### **3.Sustainability in procurement**

This topic was formatted in the previous chapter as to why procurement and sustainability can be linked in modern-day corporate world. A popular model used in sustainable procurement is Elkington's (1994) Triple bottom line model. This model is depicted below in Figure 3. This model consists of three fields, economical, environmental and social. This research focuses predominantly on the latter two, but to construct a better overall understanding, all three fields will be accounted for.

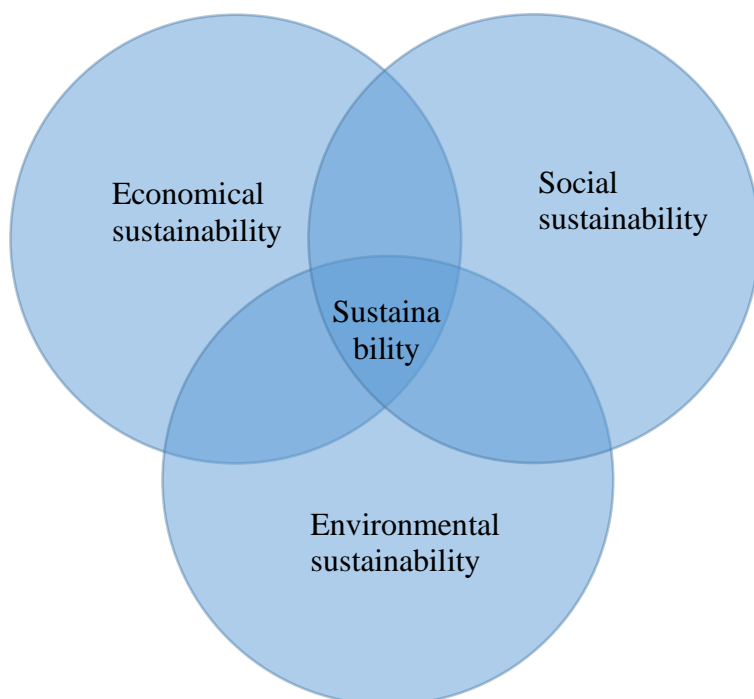
It is important to understand that sustainable procurement and corporate sustainability do not mean the same thing. Sustainable procurement can be defined as implementing sustainable measures in the procurement process and making sure that the products and services purchased are as sustainable as possible. (Meehan & Bryde 2011) Corporate sustainability on the other hand is used to describe procedures and practices that the



company does in order to be sustainable, that are not required by the appropriate legislature (Zink 2008).

### **3.1 Triple Bottom Line model**

The concept of the triple bottom line model is widely accepted in the procurement community. It was introduced by John Elkington in 1994 and has since been cited by himself and other researchers, such as Weber et al. (1991) and Carter and Rogers (2008).



**Figure 3** Triple bottom line (Elkington 1994)

Niskala, Pajunen and Tarna-Mani (2015) note that economic sustainability is often thought to only be how profitable the business is, and how its generated added value is distributed between the company and its different stakeholders. Economical sustainability is not only limited to these aspects, but also include how financially sound and its competitiveness. The stakeholders can reach to as for as the whole society, so paying higher taxes can be considered economically sustainable, as it creates added value to the stake holder, in this case the members of the society using tax funded goods and services. Social responsibility summarized

concerns efficient and economical use of natural resources, such as water, atmosphere and soil, safeguarding the diversity of nature as well as tackle climate change. (Niskala et al. 2015) When producing a product or service, the company is responsible for its climate foot print wholly (Zink 2008). The third field is social sustainability. Social sustainability covers taking care and improvement of the personnel and their skills as well as the following; respecting and acting according to human rights, responsible termination of a labour contract and advisable policies in the corporate network. (Niskala et al. 2015) These two will be covered more in the next subchapter. Implementing these sustainability measures above the minimum legislations and regulations imposed by national and international authorities can be disclosed in the companies strategy. More about strategic corporate responsibility will be addressed in subchapter 3.4.

### **3.2 Social sustainability**

Social sustainability is defined by McKenzie (2004) to be the following: “a life-enhancing condition within communities, and a process within communities that can achieve that condition”. The social aspect of sustainability is often not as visible when sustainability is discussed, but is equally as important. Anisul Huq, Stevenson and Zorzini (2014) argue that literature about social sustainability lags significantly behind when compared to existing literature about environmental sustainability and is often done in the context of developed countries when it applies further to developing countries. Anisul Huq and Stevenson (2018) furthermore present the idea that social sustainability has only become a topic of interest to consumers as major violations concerning it have come to light in mass media, such as the one concerning an apparel factory and its collapse in Bangladesh in 2013.

One additional reason as to why it is overshadowed by economical and environmental sustainability is argued to be that when supplied from developed countries, the appropriate legislation cover a significant portion of the clauses considered. (Anisul Huq & Stevenson 2018) Examples of this can be found in the Finnish law, for instance the Employment Contract Act (55/2001) and the Working Hours Act (872/2019). These legislations cover contractual issues, maximum working hours, overtime, child labour and minimum wages.

This is not the case in many nations around the globe and these places can thus produce low-cost products, due to their inexpensive work force. The item with the cheapest net price would most likely be the most economically sustainable choice for the company. Nonetheless this could contradict with social sustainability and simultaneously risk being viewed as an unappealing supplier to the final customers. Thus incentives to operate in a socially sustainable manner can be both internal and external. (Anisul Huq & Stevenson 2018) Socially sustainable practices can entail minimum wages above the national set minimum, appropriate working hours, adequate breaks during and between shifts, disemploying underage workers and appropriate working conditions and gear (Gal, Akisik & Woolridge 2018). Social sustainability also consists of sustainability concerning the society or societies affected. Companies in question should not affect the society in a negative way and if they want to implement highly efficient social sustainability measures, they can actually improve the specific society instead of trying not to harm it. These measures can be for instance tidying the surrounding environment or offering jobs or internships to minority groups of people, such as students or the disabled. (Niskala et al. 2015)

### ***3.3 Environmental sustainability***

The second section of the Triple Bottom Line model (Elkington 1994) discussed in this research is environmental sustainability. Implementing this requires conscious effort from the purchaser, but can be easier to trace than social sustainability due to the more quantitative nature of the parameters used, such as carbon dioxide emissions or package waste. (Gupta 2008) Companies are also legally bound to comply to national and at times international legislations as well as official directives (Ilomäki, Tuomainen & Kautto 2007), such as the Environmental Protection Act (527/2014) in Finland and the environmental law by the European Commission. The latter one is composed of multiple different legislations, such as ones specifically addressing chemicals, noise pollution, soil protection and waste management. (European Commission website)

Complying to the appropriate legislations and official directives is only the minimum required and in order to be more environmentally sustainable a company can take further actions.

These can include a variety of things, but in this research only the ones concerning supplier selection and auditing are addressed. Wilson (2015) addresses that companies seem to emphasize environmental sustainability in their strategies for publicity reasons. These can be mentioned in either one or both in the company's strategy and code of conduct. Publicity reasons can include for example a more compelling image to customers or consumers and stakeholders. These actions can also have internal incentives, such as decreased greenhouse gas emissions, which can have a financial incentive, if the country in which the company is located in has environmental taxing in use. Other incentives may be improved energy efficiency and possibly more efficient production. (Gupta 2008)

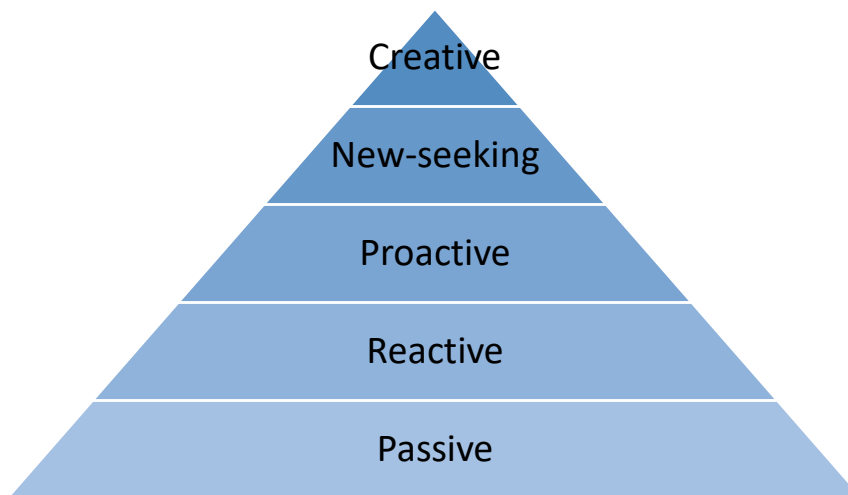
### ***3.4 Strategic corporate responsibility (SCR)***

Strategic corporate responsibility as a concept means executing sustainability measures that are not imposed by legislation or regulations. So doing more than the minimum in regards of sustainability. Doing this requires vast knowledge of the market the company is situated in and can create a competitive advantage to the company. (Juutinen 2016) Rai and Bansal (2015) define a responsible company not only as one that works responsibly from the point of view of their shareholders, but in addition to other shareholders, such as customers, employees, suppliers, governments and communities.

Corporate responsibility can be observed on five different levels and these levels are presented below in Figure 4. Out of these, the lower the level is on the scale, the weaker the level of corporate responsibility and vice versa. The scale starts from passive responsibility followed by a pair often cited in literature concerning corporate responsibility and sustainability, reactive and proactive responsibility. The two highest levels of corporate responsibility, as noticeable from the names, require active research and desire to develop their operation. These two latter levels are called new-seeking responsibility and creative responsibility. (Heikkurinen & Forsman-Hugg 2011)

The names of the different levels already tell quite a bit about them, but it is important to understand them more wholly to get a better understanding of this research and its results.

Passive corporate responsibility means that the company is only abiding to the bare minimum set by authorities and legislation. The reactive level implies and means that the company in question is willing to do measures in order to be more responsible and sustainable, but only when it does it out of a reaction to something that has already happened, for example high emissions. Proactive on the other hand means that the company is actively trying to make itself more sustainable and working precautionarily. (Heikkurinen & Forsman-Hugg 2011)



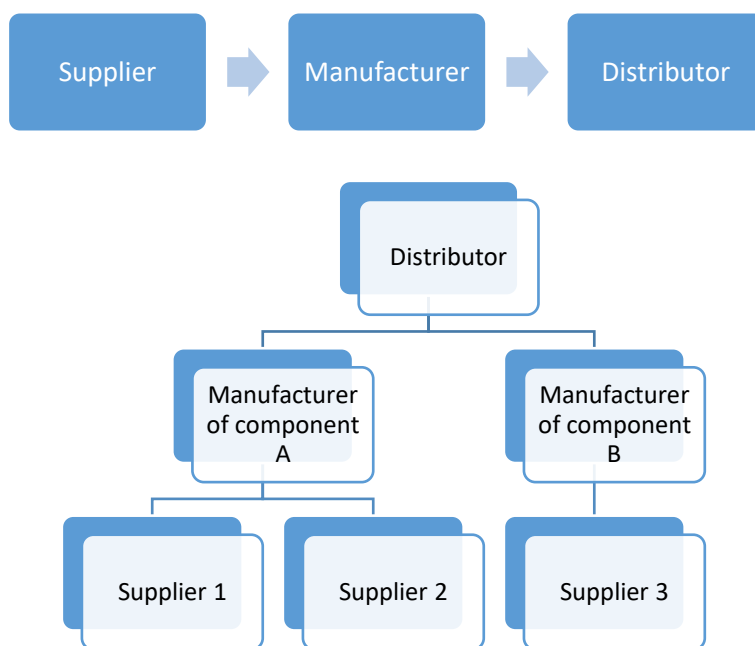
**Figure 4** The levels of strategic corporate responsibility (Heikkurinen & Forsman-Hugg 2011)

Executing strategic corporate responsibility can be effectively done when implemented to a company's procurement process. This is due to the fact that procurement is in charge of sourced products, services and commodities. Sustainable sourcing of these is the basis of a sustainably working company. (Hallikas & Lintukangas 2016).

### ***3.5 Sustainable supply chain management (SSCM)***

As globalization and economic development continues supply chains are getting longer and more complicated. Often times they are not even chains anymore, but more like webs. The difference between a supply chain and a web is illustrated in Figure 5 below. This shift in shapes towards a more interlinked can be accounted to globalizing commerce and technological advancements. (Kawa & Maryniak 2019)

Sustainable supply chain management in and of itself means a management process, which integrates the following: environmental considerations, social performance and economic contribution (Baliga, Raut & Kamble 2019). Hassini, Surti and Searcy (2012) have formatted SSCM as managing supply chain operations, resources, information and funds in order to maximize supply chain profitability, while at the same time minimizing environmental impacts and maximizing social well-being. What can be observed from these definitions is that the three main themes, environmental, social and economical, are the same as in the Triple Bottom Line model by Elkington (1994). Aside from making the company and its operations more sustainable, SSCM can also increase profitability due to enhanced effectiveness (Tseng 2008). This claim has been supported by Kang, Lee and Huh (2010) with their research concerning the hospitality business. There also seems to be contradicting evidence to this as Balabanis, Philips and Lyall (1998) pointed out that extensive investment in environmental sustainability can make net prices too high. As mentioned in subchapter 2.2, net price is a prominent criteria, but not the only one of high importance. If the price is competitive environmental sustainability can have a positive effect on the purchasing decision. This conclusion has been backed by Roberts and Dowling's (2002) study, which had a similar conclusion.



**Figure 5** Classic supply chain and more modern supply network compared (Adapted from Kawa & Maryniak 2019)

As supply chains are getting lengthier, more complicated and more international, making sure all suppliers, even in the lower tiers, are working sustainably is a laborious process. Often companies trust that their suppliers have similar sustainability standards to theirs and would so only source from sustainable suppliers themselves. Information about lower tier suppliers may be insufficient or not present and thus not forwarded to higher tier suppliers. In order to be more sustainable, a company should be aware of the economical, environmental and social measures their suppliers take. (Wolf 2014)

An audit process is an objective analysis and examination of some part of a company's operations in order to confirm the processes are complying to the standards expected (Gaikwad, Priyanka & Jadhav 2018). Auditing for decades concerned financial aspects and stability until the 1980s, when its usage expanded to overall management and later on to aspects of sustainability (Pierre, Peters & de Fine Licht 2018). Multiple international auditing standards exist as a way to simplify supplier selection. These standards are granted by third parties in order for them to be free from conflict of interest. These are thus called third-party audits (TPA) and possibly the most well-known TPA is the ISO (International Organization for Standardization). ISO itself does not grant these accreditations, but third parties do, hence being a TPA. (Suomen Standardoimisliitto SFS) Multiple different ISO accreditations exist, but the ones discussed in this research will be the 9001, 14001 and 18001. These ones are summarized in Figure 6 below.

<p><b>ISO 9001</b> Quality control SFS-EN ISO 9001 (2001)</p>	<p>A standard concerning quality control regimes in corporations. Stresses operational environment, risk management and quality control principles.</p>
<p><b>ISO 14001</b> Environmental SFS-EN ISO 14001 (2015)</p>	<p>The most well-known environmental management system globally. It aids to both improve and indicate desirable conduct of environmental matters.</p>

<p><b>ISO 45001/ OHSAS 18001</b></p> <p>Occupational health and safety regime</p>	<p>Provides a framework for corporations concerning occupational health and safety. This allows said corporations to manage their risks and improve functions.</p>
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**Figure 6** Widely used sustainability standards (Suomen Standardoimisliitto SFS)

A company can also choose to audit possible suppliers themselves either in a specific area of operation or the whole quality control process. This is abbreviated as SPA meaning systems and process assurance. (Dalmau, Gimenez & Castro 2016) In addition of utilising different accreditations, such as the ISO, companies often create their own code of conduct for suppliers. A code of conduct is a practical document of standards for client relationship, code of practice as well as technical document setting standards for staff and other members. When a contract is made between a company and a supplier, the supplier agrees to follow the clauses in said document. (Oude, Vrielink & Montfort 2009)

## 4. Empirical study

This chapter will form the empirical section of the research. First the methodology used will be covered followed by the material composing of both the interviews conducted and public documents from Company A. In addition Company A will be described briefly and the subject of procurement, batteries and conflict minerals, which they can include, mentioned earlier will be addressed and introduced to the reader.

### 4.1 Methodology and sources

This research was conducted as a qualitative research composed of an interview and analysis of public documents by Company A. The interviews were executed as half structured interviews meaning that a framework for the interview questions was made and approved



before hand, but the interviewer had the right and ability to modify the order of the questions as well as ask defining questions, if they were deemed necessary. (Eriksson & Kovalainen 2016)

This research was performed as a case study. Metsämuuronen (2008) has defined the case study as an empirical study, which utilizing multiple and diverse ways of acquiring knowledge. The case company in this research was chosen by first contacting multiple different larger companies and corporations. After discussing with a few different companies, Company A was chosen as they offered a concrete subject of which the outcome they are truly interested and invested in. Company A has a desire to be more sustainable, but they have only recently started the process and are self-aware that it is yet to be fully finished and implemented into daily operation.

Primary source for this empirical study was the interview conducted, but secondary sources were used to create a more comprehensive view. The employee interviewed is a category director in charge of ship mechanics. These secondary sources include, for example Company A's Code of Conduct, annual reviews and sustainability reports. This material accumulated was then analyzed using content analysis. This allows systematical and objective analysis of documents. In this case documents can refer to a wide array of information ranging from books to conversations, as long as it is in a literal form. (Tuomi & Sarajärvi 2018) This in the case of this research is transcriptions of interviews.

<b>Name of the source</b>	<b>Year published</b>	<b>Amount of pages</b>
Annual review 2019	2020	38
Statement for slavery and human trafficking 2018	2019	1
Supplier Code of Conduct	Not specified	6

**Figure 7** Public sources by Company A used in this research

#### ***4.2 Case Company and its sustainability goals***

The case company used in this research, referred to as Company A, is a corporation, which works in cargo handling solutions. The company's headquarters are located in Helsinki, Finland, but they employ over 12 000 workers in 43 different countries and operate in more than a hundred nations. Company A is actively trying to become more sustainable, both environmentally and socially, as it strives to become carbon neutral by the year 2030 so that their net emissions would be zero. 95 per cent of their carbon emissions come from raw material sourcing and the use-phase of sold product, which means that the target of carbon neutrality expands beyond just their own operations. (Company A website) The logistics industry accounts to 7 per cent of global carbon emissions (Company A annual review 2019) which is why it is important for large corporations like Company A to move towards more sustainable business. In the quest of becoming carbon neutral, they have listed as their aim for 2020 to raise the share of renewable energy used in operations to 40 per cent and to 50 during 2021. Company A also executes strategic corporate responsibility as their long-term strategy formed in 2018, that is in action from 2019 to 2021. (Company A website)

Company A has its Supplier Code of Conduct and sustainability reports, which are included in the annual reports, published online for anyone to read. In addition they have committed to the United Nations Global Compact's Business Ambition for 1.5 C meaning that they are cooperating on science-based measures to limit global temperature rise to 1.5 C. Currently Company A has a more extensive sustainability program in action for social sustainability when compared to its environmental counterpart. Their sustainability reports, strategy, websites and Supplier Code of Conduct all have a heavier emphasis on social sustainability and ethics. (Company A website) This can be, at least partly, accounted to the fact that Company A's field of business have components that still require or use non renewable energy sources, such as oil and coal (Luna, Mart-Ortiz, Gracia & Morales-Ramírez 2018). When new sustainability goals are viewed, Company A's new goals seem to emphasize environmental sustainability, as is apparent in their strategy.

### ***4.3 Current supplier selection in Company A***

From the transcription used, it is apparent, that Company A has quite a traditional process when choosing new suppliers. It shows all six stages stated in subchapter 2.1 starting from determining the necessity and finishes with follow-up and evaluation. The second stage being supplier selection, in which the implementation of sustainability measures is crucial. Choosing a supplier that works in a socially and environmentally sustainable way, ensures that Company A's final products and services are such as well. This requires that also lower tier suppliers adhere to the same or at least similar measures, but knowing this requires contributions both from Company A and its suppliers.

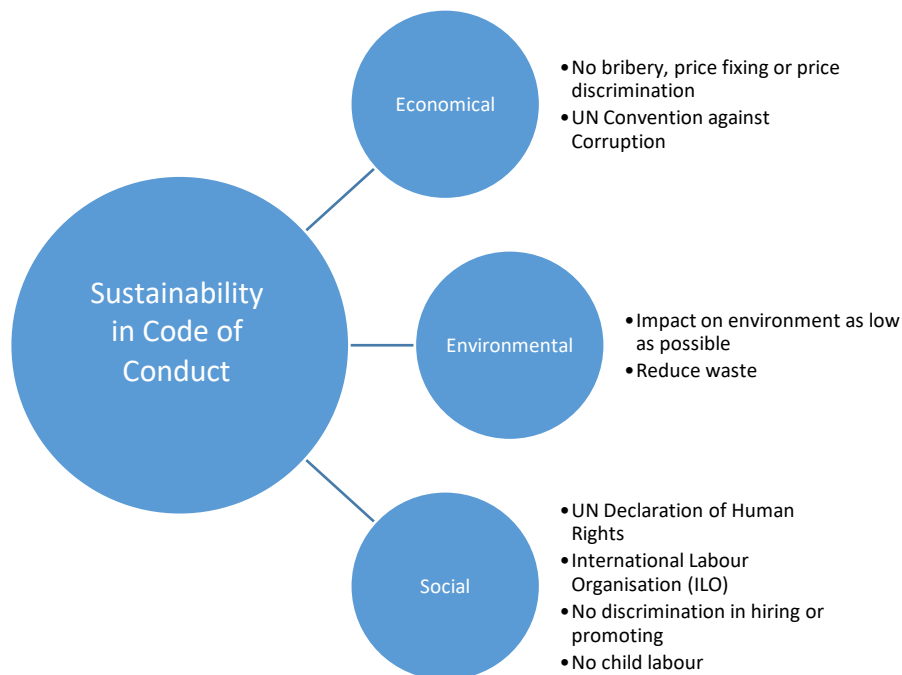
Company A shows to use similar criteria for supplier selection as mentioned in subchapter 2.2. These criteria being net price, quality and delivery. These can all be accounted to economical sustainability, but this can be expected from such an industrial company, who mainly works in B2B sales instead of B2C. As mentioned by Company A's representative in the interview conducted, economical sustainability is highly valued, but social and environmental are currently on the rise. Valuing these latter two just can not make the price too high when compared to competitors. If the price becomes too high and thus not competitive enough for the markets they are present in, sales would decrease and implementing sustainable measures would have a negative effect.

Technological aspects should also be taking into consideration when selecting a supplier and purchasing a product in the case of Company A. These aspects can include, in the case of Company A, longevity of batteries and strength of metal. Both commercial and technological aspects as well as the sustainability aspects vary between different product categories and thus they cannot be generalized for the whole company. After looking at financial, technological, commercial and sustainability aspects, a handful of suppliers, anywhere from 2 to 5, are chosen for further investigations. Depending on the product, amount and location in question one or possibly two best fitting suppliers are chosen.

#### 4.4 Auditing suppliers and their sustainability

Company A's representative stated in the interview, that they utilize a third party expert, when auditing a possible new suppliers environmental and social sustainability level. In addition of aiming to be both socially and environmentally sustainable, Company A has to take into consideration economical sustainability and profitability. As mentioned by the company's representative, if being socially and environmentally sustainable drives their prices too high compared to their competitors, sales will decrease. This would then defeat the purpose of being sustainable as it is no use, if the sustainable products and services are not being purchased by consumers.

In addition to third party auditing (TPA), Company A also utilizes their own Supplier Code of Conduct. The main points from each of the fields, economical, environmental and social, are summarized in Figure 8 below. This Code of Conduct is not very extensive yet, but it would be challenging to do so as their subjects of procurement vary greatly. This is, at least partly, the reason why TPAs and internal documents are used.



**Figure 8** Company A's Supplier Code of Conduct

As mentioned before, in addition to international standards and the Code of Conduct, Company A has internal documents concerning sustainability and sustainable procurement. These are utilized when selecting a new supplier as well as when evaluating existing ones. Auditing suppliers in Company A is very much limited to the first tier suppliers. This means that they, at the time being, focus their auditing only to the suppliers they are directly in business with. When they are purchasing something, apart from basic commodities, they cannot be sure that lower tier suppliers have operated in a socially and environmentally sustainable and responsible way. Possible ways of improvement in the future are addressed in subchapter 4.7.

Auditing in Company A concerns both new possible suppliers as well as older partners, as they may not have been screened as much in detail about sustainability as more recently selected suppliers. The employee interviewed mentioned that the auditing process is not based on scores and weights, but rather is a checklist of technical, financial and sustainability measures that need to be fulfilled. In subchapter 3.4 strategic corporate responsibility (SCR) was discussed and its different levels shown. From the information gathered during this research, an evaluation can be made that Company A is currently between the second and third level, these levels being reactive and proactive responsibility. Company A fulfills the criteria of being a reactive company as it reacts to, for example questions concerning the safety of their workers. Even though they are constantly improving and making new initiatives, they can not yet be considered to be at the proactive level. This is largely due to the fact that they do not perform extensive sustainable supply chain management (SSCM) yet.

#### ***4.5 Usage of international standards***

In order to ensure that their suppliers are at least on an adequate level of sustainability, Company A requires their suppliers to adhere to at the minimum to ISO 9001. This shows that the company in question has sufficient quality control levels, as viewed by a third party auditor (Suomen standardoimislaitto SFS). This is only the minimum and ISO 14001 is sought after. This standard proves that the supplier is working in an environmentally sustainable way and is both

aware of their current state as well as how they should improve in the future. The third standard that Company A prefers their suppliers to have is the ISO 45001. By possessing this standard, possible suppliers are able to demonstrate to Company A that they have regimes in place for occupational health and safety.

Usage of these ISO standards showcases the suppliers level of management and sustainability as an entity. ISO 9001, or similar criteria, demonstrate that the supplier's company is well managed and systematic. Due to this it can be used when the company's economical sustainability is being examined. The ISO 9001 on the other hand proves the possible supplier's adequate level of environmental sustainability. The third element of social sustainability is covered by the ISO 14001 standard, which proves that the company's workers have safe working conditions. Even though these previously mentioned standards cover the three aspects of sustainability as presented by Elkington (1994), they can not be capitalized as the whole sustainability research in a procurement process. This is due to the fact that these standards are universal and not related to the specific field of business, in this case cargo handling, and do not cover sustainability as a whole. Sometimes more specific criteria can be required or deemed useful. These are very apparent in the retail world, which uses standards for specific product categories like the Marine Stewardship Council, UTZ and Better Cotton Initiative. The details of these standards in the cargo handling industry were not disclosed in this research.

#### ***4.6 Supplying batteries***

As a notable part of cargo-handling services and machines contain and use batteries, it is only natural that Company A has to source them. The batteries they are buying are then used to build even larger entities, such as cranes and forklifts used in ports (Company A Website). Batteries in and of themselves are a complex ensemble, that require sourcing from multiple suppliers. These suppliers often further supply from multiple different suppliers to create a section of the final battery, making the supply chain more like a supply network showcased in Figure 5 in subchapter 3.5.

Some batteries can include so called blood or conflict minerals. These are controversial and a current topic in sustainability. These minerals are relatively rare metals, such as cobalt (Co) and lithium (Li), and are used in for example new technology batteries. They are used over more general ones including iron (Fe), copper (Cu) and aluminium (Al) due to their particular properties. To mention some properties, cobalt is used due to its stability and high stability, which creates safer and longer lasting batteries. Lithium on the other hand is used, because of its light weight as well as its high energy density. (Arikan, Reinecke, Crawford & Morrell 2017)

The name of these conflict minerals stems from the way they are acquired. The European Commission defines conflict minerals as minerals of which trade can be used to finance armed groups, fuel forced labour and other human rights abuses, and support corruption and money laundering. (European Commission website) The European Union has compiled a regulation concerning sourcing these minerals and this will take effect on the 1st of January 2021. The aim of these regulation is to ensure that companies based in the European Union will source their needed minerals from responsible and conflict-free nations only. It is highly encouraged to start adhering to these regulations before the deadline. These regulations only apply to the following minerals: gold, tin, tungsten and tantalum. These minerals are mainly used in consumer products, such as laptops, mobile phones and light bulbs and not so much in industrial machinery, like in the case of Company A. In addition to this regulation, OECD has also made one for all OECD countries and for 6 non-member countries to follow. This encourages countries to source outside major mining countries and China, which are known to have major human rights issues. (OECDa & OECDb)

Over 43 per cent of cobalt exported in 2018 came from the Democratic Republic of Congo (DRC), (OEC World) which has little to no legislation on social sustainability, work conditions and child labour (Fiscor 2005). The largest importer of cobalt in the same year was China, importing over 46 per cent of all cobalt importations. (OEC World) What makes avoiding sourcing products including these conflict minerals challenging is that not all suppliers offer information or are aware of where and how products further down the supply chain are acquired. Companies also have do not have regulatory incentive on sustainable sourcing of conflict minerals outside of the four mentioned before. That is proven by the large amount

still supplied from the DRC. Largest problems concerning conflict minerals is the working conditions of the miners. Multiple investigations have been made about the working conditions of these workers, especially in the DRC, and have noted multiple matters. These include widespread use of child labour, very low minimum wages and inhumane working conditions. (Fiscor 2005)

The future of cobalt usage and its mining has some hope. China's Chamber of Commerce of Metals, Minerals & Chemicals Importers & Exporters launched the Responsible Cobalt Initiative in 2017 to bring together large technology companies to agree to eliminate child labour from their supply chains altogether. This is a notable step, as mentioned before, China was the largest importer of cobalt in 2018. If this was to be implemented to the extent that companies could trust Chinese suppliers that their products were not made using child labour, Chinese products would become more socially sustainable in the eyes of the purchasers. This would also be an improvement for Company A as they supply a notable amount of their batteries from China.

A notable shortcoming in Company A's level of sustainability in procurement is that, as discussed before, they do not audit past first tier suppliers. This would be very important in the case of sourcing batteries as well as making sure they do not include conflict minerals. Batteries are a complex entity consisting of multiple components often supplied from different suppliers and then assembled by one company (Saevarsdottir, Tao, Stefansson & Harvey 2014). As Company A does not perform sustainable supply chain management in a way that could be considered adequate for such a large company sourcing so many products, their overall level of sustainability in procurement is still lacking. The supplier from which the final product, in this case batteries, is sourced from is audited and even possesses standards, such as the ISO 14001, it does not serve as a guarantee that all the components of the final product have been acquired in a way that fulfills Company A's sustainability measures. Solving this would require comprehensive changes in the procurement process. Possible solutions for this will be discussed and presented in subchapter 4.7.

Company A does a significant part of their sourcing outside Finland and the European Union, which can imply lengthy transportations, and batteries are no exception. The Company's



representative stated in the interview that they source from countries, such as Eastern Europe and China, the latter proving the statement about long distances. These transportations have environmental costs and increase as the distance does the same. By sourcing from closer geographical areas, Company A could reduce their environmental impact as well as increase their level of environmental sustainability. It is also important to take into consideration that the methods of transport impact the amount and type of emissions greatly. China is also a very good example on countries that have very high carbon dioxide emissions. As pointed out by the representative, the Paris agreement from 2015 grants China with looser emission goals than many of its counterparts (Center for Climate and Energy Solutions). This means that companies based in China do not have as much of a regulatory incentive to be environmentally responsible, meaning they do not have the same external incentives as many of their counterparts due and are thus more reliant on internal incentives. This is not to say that this is true regarding all companies, but thorough auditing regarding environmental standards should thus be made.

From a social sustainability point of view the areas mentioned, the DRC, Eastern Europe and China, have yet to reached the level of sustainability that is conducted in many developed nations, such as that of Finland. This is why the importance of social sustainability on a corporate level is heightened. As highlighted in the interview conducted, the incentive to be socially sustainable can be seen from both legal and consumer perspective. The largest risks regarding social sustainability when purchasing batteries are the use of child labour, poor working conditions, poor waste management and unfair compensation of work for the workers.

#### ***4.7 Development of supplier selection sustainability in Company A***

Company A has in the recent years started to make more of a conscious effort in making sure they are supplying from all-around sustainable suppliers. This process is yet to be fully finished or implemented, which can be expected as they are such a large company supplying multiple different types of products and work in a field of business that has a history of having large emissions. The company has established infrastructure and supply chains relying on fossil fuels

and less sustainable supply chains as well as their management. In order to be more sustainable in a social point of view the working conditions of suppliers' employees should be audited and monitored to make sure that they have desirable working conditions. To help with this the ISO 45001 could be mandated from all suppliers in addition to the ISO 9001.

Even though this process has started and even though existing suppliers are audited, it is only occasional. For the whole procurement in Company A to be on the level of sustainability they are going for, the whole supplier base should be audited or it should experience close to complete turnover. This is because all new suppliers are audited in a way that aligns with the company's current sustainability goals stated in annual reviews and its strategy. Even though Company A audits their new suppliers more with sustainability in mind, their procurement process still pays little to no attention to lower tier suppliers. This could be resolved, at least partly, by implementing sustainable supply chain management. In the case of Company A this could include making having proper documentations regarding suppliers used by the potential new supplier mandatory. These documentations could include the ISO 14001 and the previously mentioned ISO 45001.

In order to make sure that employees adhere to the sustainability conditions, it should be integrated as an integral part of the procurement process. For further improvements cooperation with other similar companies could be beneficial in the case of sustainability. It is understandable that competitors may not want to disclose much information with Company A, but companies of similar size, but in a different field of business with advanced sustainability measures and high levels of strategic corporate responsibility (SCR) could help Company A improve their business.

## **5. Summary and conclusion**

The theoretical section of this research was used to deepen the reader's understanding and knowledge on corporate sustainability and procurement process. The topics raised were then discussed with relation to Company A and its policies. These policies were compiled from an

interview conducted with the company's employee as well as their public documents, such as the Supplier Code of Conduct, strategy and annual reviews.

### ***5.1 Summary***

This research was made with the intention of examining how Company A could improve the level of sustainability in their procurement process, focusing on the supplier selection stage. The supplier selection process in Company A seems to have similar steps as detected in Figure 2, starting with determining the necessity and followed by supplier selection and the following four phases; contracting, ordering, delivery control and follow-up and evaluation. Due to the complexity of the products procured, the supplier selection stage is quite complex and requires the company to use a third-party expert in order to audit and choose a new supplier.

The subject of procurement of this research, batteries, has yet to be the subject of much research. Thus technical and sustainability sources had to be combined to create a comprehensive entity. Batteries, being a technological tool, are a large entity consisting of many parts, meaning that there are multiple tiers of suppliers. The lower tiers supply the metals used in the final product and thus their origin and level of sustainability can be hard to trace. This would be beneficial to do in order to make sure no conflict minerals are included in the finished product. By not funding the mining of these so called conflict minerals Company A avoids funding corruption, human rights violations and violence among other things in developing countries, such as the DRC.

Company A has fairly recently began actively developing its sustainability policies and notably in procurement. Due to the process being unfinished, some areas of improvement were discovered during this research. The most notable one detected is the lack of sustainable supply chain management. The process of auditing suppliers only covers the direct suppliers and not the lower tier ones. Positive changes were also visible as Company A has many sustainability related goals in its strategy. These concern both social and environmental sustainability, but the latter seems to have more weight as more goals concern it. The results of this research showing that economical criteria holds the highest value in the case

company's supplier selection criteria. This aligns with many previous studies, such as the ones made by Dickson (1966), Weber et al (1991) and Benton (1983). Possible ways of improvement are discussed in the next chapter in relation to the research questions presented in chapter 1.2.

## **5.2 Answers to research questions**

*How can environmental sustainability measures be taken into account when purchasing batteries?*

Environmental sustainability could be taken into account when purchasing batteries in multiple ways. The first being taking into consideration the distance between the place where the product is sourced and where it is next needed as longer transportations add up to higher emissions. Next up the way of transportation should be considered as different means of transportation pollute more than others. The environmental footprint of the manufacturing of the product should also be considered. This would ideally include the amount of emissions created and natural resources used during the entire production process from the mining of minerals to when the product reaches the end of the assembly line. From an environmental point of view the lifespan of the product should be noted as the longer the lifespan is the less new products have to be bought, which decreases the environmental footprint. When talking about products in the likes of batteries, waste management should be considered. Firstly have all the suppliers handled the products responsibly and secondly how should the product, when it is discarded, be disposed and can Company A do this in a way that does not harm the society, meaning its inhabitants or nature.

*How can social sustainability measures be taken into account when purchasing batteries?*

Social sustainability is an important topic when discussing battery sourcing. This can be taken into account with thorough supplier auditing and proper SSCM. The ones most affected by social sustainability measures, et least in the case of batteries, tend to be in the lower tier suppliers' workforce. These being the workers in mines and assembly. They are often situated

in developing countries with little to no legislation on working conditions, hours or wages resulting in mistreated employees. This could be avoided with more in depth auditing, but could result in an increase in the net price of the final product or service. When auditing a possible new supplier, value should be given to different levels of social sustainability rather than being satisfied as a specific marked level is fulfilled.

*How can sustainability measures be integrated in a procurement process and supplier selection?*

In order for these sustainability measures mentioned before to be implemented in the procurement processes, Company A needs to make some overall changes in its operations. For one possible suppliers should be audited on all fields of sustainability, economical, environmental and social, should be given sufficient amount of time and attention. Instead of the current check-in-the-box method, suppliers should be given ratings on different criteria, so that differences are highlighted and ones with higher level of sustainability are preferred.

As mentioned multiple times, appropriate level of SSCM is still missing in Company A. This should be their next step towards more sustainable procurement. As economical sustainability is already highly valued, its social and environmental counterparts should be given more value. This can already be seen in Company A's new public documents.

### ***5.3 Follow-up research ideas***

As a bachelor's thesis, like mentioned before, is not a very extensive research, following research regarding this topic could be beneficial. Because the theoretical section of this research is quite vast, following researches could place more weight on the empirical study and on acquiring more information from Company A, or another case company, itself. This empirical section could base more heavily on interviews conducted and thus by having more transcribed material a more comprehensive analysis could be made. This research was intentionally limited to only one sourced product, meaning other researches could be made having other products or product categories as a focal point.

It was intended that a third-party specialist would be interviewed, but this got cancelled for unknown reasons. If this could have been executed more comparative analysis could have been conducted. This could have been especially beneficial in pointing out possible places for improvement and new ways of working. These new ways could include a more integrated sustainability process or a new way of auditing and comparing possible new suppliers. Further research could also be made on implementing sustainable supply chain management in the supplier selection. As this research showcased the significance and possibilities for improvement in this area, it could be researched further. In addition the effect of sustainability criteria contradicting other procurement criteria could be further researched as Company A still values financial and technical aspects highly.

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## Appendix

### Interview questions

Your position in the Company?

How are new suppliers found and chosen?

Can you briefly describe the process of selecting a new supplier? What are the attributes of a good supplier from your point of view?

How has sustainability affected the selection of your current suppliers? Do you have any other instructions concerning sustainability in addition to the Code of Conduct? Do you use any international standards (E.g. ISO)?

What does sustainability in procurement mean to you?

How does the company take sustainability into consideration in procurement?

Economical sustainability criteria?

Social sustainability criteria?

Environmental sustainability criteria?

How are possible suppliers surveyed? Is there a concrete list of criteria and are they of varying level of importance? Which methods are used when selecting a supplier? (E.g. interview, forms etc)

Is there a sustainability criteria, that if not fulfilled, the supplier can be immediately discarded?

If there is a case, where a sustainability criteria contradict with other criteria, how do you proceed?

Do you take any steps to ensure that the supply chain as a whole is sustainable? And if so, how is this ensured?

Are there any special traits regarding sustainability or supplier selection in your field of business?

Are you aware of how other companies in your field choose their suppliers?

Do you have any proposals for improvement in the future? Goals for procurement in the future?

Do you have anything else you would like to comment or mention?