



BI Norwegian Business School - campus Oslo

GRA 19702

Master Thesis

Preliminary thesis report

How circular economy can change the activities in the value chain to utilize a model for sustainable value creation in companies

Navn: Anders Holberg Hansen, Stian Køhn Berget

Start: 17.08.2020 09.00

Finish: 15.01.2021 12.00

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can change the activities in
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value creation in
companies -

Hand-in date:
15.01.2021

Campus:
BI Oslo

Examination code and name:
GRA 19702 Master Thesis

Program:
Master of Science in Business, major in strategy

Supervisor:
Debbie Harrison



Executive summary

This preliminary thesis report outlines how a potential master thesis will look like, and is based upon a desire to examine how the activities and the value chain will change and develop in a sustainable value creation setting in a circular economy. This is highly relevant as the world is faced with an ever-increasing problem related to a linear economy, and the challenges which such an economy has provided.

This paper begins with an introduction to the topic, and then provides an aim for the research with the following research question:

“How will the activities and the value chain change/develop in a sustainable value creation setting in a circular economy?”

Next, the paper provide an overview of the pertinent literature by first assessing sustainability and what it comprehends. Then, it assesses the literature of circular economy and sustainable value creation (SVC). Further on, it assesses the activity-based view, and more in-detail the value chain. At last in the overview of the literature, it assesses the literature on creating shared value (CSV) and how to measure this. The next section of the paper comprises the design and methods of the research. This study will use a qualitative case design, following a Gioia approach to unveil novel concepts in this area of research. Furthermore, the paper mentions how ethical considerations are important in research such as this, and how we will follow accordingly to them. The last section provides a Gannt chart of the most important happenings to provide a simple yet describing overview of the project’s timeline.



Table of contents

Executive summary	i
1 Introduction	1
2 Research question and aim	2
3 Literature review.....	3
3.0 Sustainability and sustainable development.....	3
3.0.1 Sustainable development goals.....	4
3.1 Circular economy	4
3.1.1 Sustainable value creation	6
3.2 Activity-based view	7
3.2.1 The value chain.....	9
3.2.2 Criticism of the value chain and other related concepts	9
3.3 Creating shared value	11
3.3.1 Measuring CSV	13
4 Design and methods	14
4.0 Purpose of research.....	14
4.1 Research design	15
4.2 Data collection.....	15
4.2.1 Interviews	16
4.2.2 Interview guide.....	16
4.2.3 Quality of research.....	17
5 Ethical considerations.....	19
6 Project organization, management and timeline.....	19
References	21



1 Introduction

For the last 50 years the world has changed rapidly and have experienced an economic growth that has never been seen before. The high economic growth has had implications regarding an increasing world population and consumption. Further, the importance of population growth, with also millions of people lifted up from poverty to an expanding middle class are some of the issues the world are predicted to face the coming years. This has implications for yet an increase in consumption, which already today is the main driver for increased material use in the world (UNEP, 2016). Greenhouse gas emissions (GHG) from the production of materials have more than doubled the last 20 years from 5 Gt CO₂ equivalents in 1995 to more than 11 Gt CO₂ equivalents in 2015. Further, the global material use have tripled over the past decades, and annual global extraction of materials and resources have grown from 23.7 billion to 70.1 billion tons from 1970 to 2015. This has mostly been driven by changing consumption patterns, population growth and economic growth (Hertwich et al., 2019; UNEP, 2016).

Consequently, we see that raw materials and global resources that are being extracted are not used in the best possible way. This again, has complications for the environment and will further contribute to climate change as there is an unnecessarily large use of materials and resources. For instance, in 2010, 30 billion tons of material extracted globally were used to only produce 10 billion tons of directly traded goods (UNEP, 2016). The production of material has gone from a 15 percent to a 23 percent share in global GHG emissions from 1995 to 2015. Over half of the carbon footprint stems from direct emissions from material production processes. Construction and manufacturing is accounted for up towards 40 percent each of global GHG emission (Hertwich et al., 2019). With most of the materials in construction being used to produce capital goods such as buildings and infrastructure. By utilizing material efficiency strategies, the GHG emissions from construction, operations and demolition are forecasted to decrease by 35 to 40 percent in the G7 countries before 2050. Further, this number could be even higher in other countries, such as China and India according to a report from UNEP (Hertwich et al., 2019).



These strategies centered around material efficiency will be essential to reduce the demand for energy intensive materials, better use of materials and resources, and ultimately reduce GHG emissions from materials used. A circular economy has been proposed by many as a solution to minimize the waste generated by materials and to minimize the use of input of raw material (Hertwich et al., 2019; Velenturf et al., 2019). Circular economy can be explained as an economy where the value of products, resources and materials is maintained in the economy as long as possible by utilizing recycling and minimizing waste (Hertwich et al., 2019). Or in the words of the leading Ellen Macarthur Foundation: “*A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems*” (Ellen Macarthur Foundation, n.d.).

However, circular economy is still an emerging research area. In this master thesis we will look into the Norwegian construction industry and how circular economy might change and develop this industry. The construction industry in Norway today is estimated to make up 40 percent of the total power consumption in Norway and between 25 to 40 percent of the GHG emissions (Bygballe et al., 2019). Further, the construction industry is responsible for about 25 percent of the total amount of waste in Norway (SSB, 2020). As a result, this sector has a lot of improvements to be made when it comes to different measures to cope with and mitigate a high amount of energy use, GHG emissions and production of waste. In this master thesis we will therefore look into how the circular economy in a sustainable value creation setting can help the construction industry in Norway to improve its use of materials, lower GHG emissions and recycle of waste. We will do so by examining how this change and affect its activities in the value chain.

2 Research question and aim

This master thesis is related to the WAVA-project and the impact circular economy can have on the economy. The WAVA-project is about making a circular economy towards mass handling in the construction industry in the Oslo area. The project is a joint collaboration between Oslo Port and researchers from BI Norwegian Business School, but also Skanska Industrial Solutions and AF Decom are included. This concept of circular economy is something that is a growing field of interest and it is gaining importance in an ever-changing world. In a circular economy there are a lot of different activities in the construction firms’ value chain that need to



change. As such, it is a need to further develop a better use of materials, as how waste can be recycled and used in a better and more renewable way. A main interest area of this research will be to examine how the activities in the value chain differ and is changed from a linear economy. Furthermore, we want to investigate how these activities can change the business model of the company and can create new opportunities to create and attain value in a sustainable way. Therefore, it is also interesting to examine how the business model can affect the value chain, and again have implications for capturing value in a circular economy. With the identification and investigation in mind, we have therefore reached a working research question:

How will the activities and the value chain change/develop in a sustainable value creation setting in a circular economy?

With this research question the importance of activities will be in focus, and how these will both be affected by the business model, value chain and again affecting value creation in a two-way stream. Thus making it an investigation into how the value chain in a circular economy might look different than what pertinent literature might take for granted.

3 Literature review

3.0 Sustainability and sustainable development

In an ever-changing world, there has over the recent year been a shift in management and corporations' mindset towards a more sustainable future. In this, the need to act and have businesses that have a sustainable focus is crucial. An important change in many businesses' opinions and actions could be argued happened in 1987 when the World Commission on Environment and Development—more famously known as the Brundtland commission—published the report *Our Common Future* (Brundtland Commission, 1987). The report that was an initiative led by UN aimed at solving societal issues related to poverty and environmental issues. From the report stems a highly valued definition which is frequently used to define sustainable development. In the report the Brundtland commission defines sustainable development as “development that meet the needs of the present without compromising the ability of future generations to meet their own needs.” (Brundtland Commission, 1987, p. 32). The paper emphasizes that the people in poverty also have a right to a dignified way of life, but still that there is a



maximum capacity in how much resources can be used and utilized that will not hinder future access and consumption of these resources.

Furthermore, sustainable development can be divided into three distinct parts and dimensions. Namely, the social, the economic and the environmental dimension (Weinberger et al., 2015). This is more often depicted as people, planet and profit, where we in the intersection of these three dimensions find sustainable development.

3.0.1 Sustainable development goals

Building on decades worth of work by UN and member countries an agenda was set in 2015 to provide a pathway for sustainable development for the world as a whole (Rosa, 2017). The new agenda, called The 2030 Agenda for Sustainable Development was adopted by all member countries in a shared view to reach a certain outcome by 2030. The essence of the new agenda consist of 17 sustainable development goals and in total 169 targets which builds on the importance of action for people, planet and prosperity (Rosa, 2017).

3.1 Circular economy

A more recent concept in comparison with the term “sustainability,” much of work and research done on circular economy has been conducted by the Ellen Macarthur Foundation (Bygballe et al., 2019). The foundation has produced several reports in collaboration with McKinsey and Company since 2012 (Ellen Macarthur Foundation, 2013a, 2013b, 2014). The first volume of the three reports, emphasize how a linear economy is limited and shows the flaws of such an economy in regard to how resources erode over time. Further, it explains how value creation can be pursued with a circular economy business model. The report identify four different groups for value creation. First, the influence of the inner circle. Second, the lengthening life span of products. Third, the influence of cascading use. Fourth, the influence of pure circles (Ellen Macarthur Foundation, 2013a). The third volume is building on how different types of input resources yields a different outcome in manufacturing processes. For instance, they distinguish different materials into different categories. Such as, if they lack systematic reuse, if they are bi-products that can mitigate the use of new products or if they are fully restorative by nature and can be reused (Ellen Macarthur Foundation, 2014). Furthermore, The Ellen Macarthur foundation defines circular economy as “*an industrial economy that is*



restorative by intention and design” (Ellen Macarthur Foundation, 2013, p. 14, 2013, p. 23).

Later, several other definitions have contributed to a broader definition of circular economy (Geissdoerfer et al., 2017). Building on the definitions of Webster (2017), Bocken et al. (2016) and the Ellen Macarthur Foundation (2013), Geissdoerfer et al. (2017) define circular economy as “*a regenerative system in which resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing material and energy loops. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.*” (Geissdoerfer et al., 2017, p. 6). As a consequence, circular economies can be perceived as a condition for sustainable development (Bygballe et al., 2019; Ghisellini et al., 2016; Murray et al., 2017; Webster, 2017). More in detail, the focus on reusing and recycling materials and building a regenerative system implies that the system itself should be in focus for achieving value creation rather than improving resource utilization (Murray et al., 2017).

Furthermore, the circular economy has been proposed by many as a solution to minimize raw material input and waste generation in production or manufacturing and construction industry (Nußholz et al., 2020; Velenturf et al., 2019). Circular economy is often seen as an umbrella-term for different ideas for innovation, to redefine products in the market and services to design waste out of the value chain and minimizing negative impacts from production. Therefore, the preservation of technical, functional value resources, materials and products could be considered as an appliance for the new value creation of economic, social and environmental net-benefits (Velenturf et al., 2019).

Although, by circulating more material in the value chains of different firms and in the economy, there will be a need for more energy. Energy will be essential, and the balance of it will be important, because the whole system-level with a circular economy will have negative-net impact on the environment. As a result, the further development of renewable energy sources will be one of the core building blocks in a circular economy (Velenturf et al., 2019). The business models will be important for material reuse and economic viability. Business models define a set of components and activities that allow us to map the organizational architecture



that create, capture and deliver value. This business model needs to gain competitive products that meet the regulatory standard and deliver strong sustainable value creation to firms and economy. Therefore, it will be valuable to look into the innovation process, such as how firms create value at the same time as they change their activities and the value chain while adhering to a circular economy principle. Firms need to do this through new products, technologies and development and change to different value chains and value chain networks. As a consequence, through these activities the firms can look at what values and costs the business model creates to the firm, customers, and the environmental perspectives (Nußholz et al., 2020).

We start to see that the circular economy is starting to affect and develop the value chain in the construction industry and in ordinary value chain companies that develop product from material and resources. Further a change is happening in organic industries, such as agricultural production, but also in inorganic, such as metal and mass (Bygballe et al., 2019; Nußholz et al., 2020; Velenturf et al., 2019). Consequently, there are some risks by adhering to a circular business model. Many studies especially draw attention towards the risk from the uncertain pricing of secondary materials and high costs towards labor and reverse logistics. The total costs often depend on the value chain structure in the firms, and therefore it is important to pinpointing transportation distance, site conditions, and quantities of material as main activities of cost in the specific reuse and recovery of material and resources. Therefore it can be needed to add new value creation activities in the value chain towards recovery and reuse processes (Nußholz et al., 2020). Furthermore, research show that circular economy implementations had a huge potential to reduce total life cycle costs, it improves competitive advantages and innovations, as well as user value and reduced environmental impacts from raw material and waste. This may also have impact on corporate image and marketing in firms (Nußholz et al., 2019, 2020).

3.1.1 Sustainable value creation

As mentioned earlier Geissdoerfer (2017), found that circular economy is a condition for sustainability, and can be seen as a trade-off or as a beneficial relation. Furthermore, both circular economy and sustainability often rely on system design and innovations as main drivers for reaching their desired goals, backed by multi or interdisciplinary approaches in order to integrate non-economic aspects into



development (Geissdoerfer, 2017). In addition to this, it challenges the traditional view of value, where it does not only includes costs and risks but emphasizes differentiation to identify opportunities for value creation. For instance, that cooperation between stakeholders is not only something that is desirable, but crucial in order to reach the desired goals. As a consequence this way of *sustainable value creation* (SVC) could be regarded as a distinct way of distinguishing value.

Moreover, this way of creating value is prone and determined by the business model of the company, which could be changed due to a perception in redesigning of processes and cycling of materials. As such, it is crucial for businesses to adapt to this new approach to sustainability as a business strategy to engage with the challenges the world is facing (Murray et al. 2017). Furthermore, Murray et al. (2017) brings up the notion of inter-firm clusters but also whole cities/municipalities, in addition to the single enterprise's business model in how to realize a sustainable value creation.

It is important to determine what value the business model creates for the company and its customers, and also for external stakeholders such as society and the environment. In order to create economic viability, an appropriate business model is essential in order to answer questions of how a company can meet circular economy principles and at the same time create value. Something which can be done through new products and innovations, revised value propositions and value chain networks (Bocken et al., 2016; Murray et al., 2017; Nußholz et al., 2020).

3.2 Activity-based view

According to Porter (1996) the activities that goes into the making of the product is the basic units of competitive advantages. For the firm to gain competitive advantage the firm need to obtain operational effectiveness. This means performing these activities in a better, faster or with fewer inputs than the rivals. The essence in a strategy is in the activities to the organization. Strategy is when a firm choose to perform similar activities differently or better than the rival or to perform entirely different activities than the rivals. Otherwise, the strategy will not be any more than a marketing mantra that will not cope with the competition in the market (Porter, 1996). Or in Porter's own words: "*the essence of a strategy is to perform activities differently than rivals do*" (Porter, 1996, p. 9).



Richardson (1972) explains the importance of activities in industry firms. Richardson meant that we could look at the industry as carrying out a large number of different activities. These activities could be related to discovery and estimation of what the future will hold, research, development, or the design of the products. But these activities could also be towards the execution and co-coordination in the organization process and physical transformation, and the marketing of goods to name a few (Richardson, 1972). Hence, Richardson (1972) is talking about the entire value chain of an organization as Porter presented later in 1985 (Porter, 1985). Further, the organizations with the right capabilities will carry out these activities in the best way. These capabilities can be material technology, such as cellulose chemistry, civil engineering, and electronics. However, it can also be skills in marketing, knowledge, or the reputation that the organization have in the market. With the right activities the organization will get the best out of these resources (Richardson, 1972).

Furthermore, the activities in an industry need to be complementary. Complementarity in this case is when the activities presents different phases in the process of production and will therefore require some way of co-coordination (Richardson, 1972). However, it is also important that this concept of complementary and co-coordination also comprehends the relationship between marketing, research and development, and human relations in the organization. This is also known as the support activities in the value chain (Porter, 1985, 1998; Richardson, 1972).

The complementarity and co-coordination between the activities in an organization can also be seen as the *fit* between the activities. The fit between the activities can be explained as the way the activities in a firm or organization interact, reinforce, and strengthen one another (Porter, 1996). The fit between the activities will both drive towards competitive advantages, as well as sustainability in the organization. This will make it harder for competitors to imitate the activities in the value chain in an organization, as its competitive advantages derives from the fit between the activities. Since the activities will affect one another, and with a strong link and fit between these activities they will instead reinforce one another. Therefore, with a high degree of fit between the activities, the organizations will attain a value chain



that is as strong as its strongest link which can prohibit competitors to imitate the activities (Porter, 1996).

3.2.1 The value chain

Porter's (1985) value chain is an important tool to analyze the logic of firm-level value creation through the activities in the firm. The purpose of the value chain analysis is to decompose the firms' important strategical activities and look at the impact they have on the value and cost in the firm (Stabell & Fjeldstad, 1998). The value chain model is a long-linked technology, where value comes from the input resources that become the product. Raw materials and intermediate products are often transported to the manufacturing facility that transforms these resources into a product and is then sold to customers (Porter, 1985, 1998; Stabell & Fjeldstad, 1998). To do this, the value chain have a lot of different activities that need to work together and be coordinated with a good fit, as mentioned earlier (Porter, 1996). The basic assumption in the value chain model is that the activities are building blocks to create the valuable product that the customers are willing to purchase (Stabell & Fjeldstad, 1998). Value chain configuration is separated into two levels: the primary activities and the support activities. The primary activities are directly involved in the production and the physical product the firms sell to the customers. Though, the support activities enable and improve the performance of the primary activities. Therefore, the importance of different activities that have different role and building blocks in the value chain are essential to provide value creation in the firm (Porter, 1985, 1998; Stabell & Fjeldstad, 1998).

3.2.2 Criticism of the value chain and other related concepts

However, there is some criticism or revivalism towards the value chain and activity-based view, which stems from a resource-based view. This is also a framework used to analyze firm level factors (Sheehan & Foss, 2009). Put simply, the resource-based view examines the resources in the company and emphasize that this is the reason for competitive advantages. However, these resources needs to have certain characteristics, and they need to be valuable, rare, difficult to substitute or inimitable and well-organized (Barney, 1991; Wernerfelt, 1984). Hence, it is being argued that the activities are the key link between the resources and the strategic position they have. Resources becomes valuable when they are put into the activities. These activities can create a higher value for the resource, lower production costs and can create a higher utilization of the resource. The best way to



comprehensively explain value creation in a firm is to combine these two. Resources will provide some advantages, but it is through the activities that the firm perform and achieve the competitive edge over competitors (Sheehan & Foss, 2009).

Furthermore, Stabell & Fjeldstad, (1998) criticized Porter's value chain, and provided ideas to further develop the activity-based view in analyzing firm level factors and the analysis of value creation through the activities in the firm. In their research they found it difficult to apply the value chain framework. The value chain is well-suited to describe the ordinary manufacturing firm, but it is less suited to analyze firms in for instance the service industry, such as the value chain of consulting firms. In addition to the value chain Stabell & Fjeldstad, (1998) suggest two new models: the value shop and the value network.

In the value shop model the firms create value by using resources such as knowledge and activities to solve the customer's problem, such as consulting firms. In the value shop the primary activities are not linear as in the traditional value chain, but more circular. The main activities are problem finding, problem solving, choice, execution and control and evaluation. These are repeated until the problem from the customer is solved, and is one of the most important factors in value shops. The support activities here are the same as in the value chain (Stabell & Fjeldstad, 1998).

In the value network the firm's main task is to link clients or customers who are or wish to be interdependent with others. It is important that the firms provide a networking service, and the firm itself is not the network. Good examples of firms like this are telephone companies, insurance companies, banks and big platforms such as Amazon and Facebook. In the value network the primary activities are consisting of three different activities. First, there are network promotion and contract management between the members, and the activities are mostly focusing on selection of and inviting new customers. Second, there is service provisioning, where the activities are focusing on maintenance and service towards the customer. The last and third is network infrastructure operation, where the activities consists of maintaining and running the physical network infrastructure. The support



activities in the value networks are also the same as in the value chain (Stabell & Fjeldstad, 1998).

Stabell & Fjeldstad (1998) argue that with the introduction of two additional ways to look at value creation through the activities of the firm, and that the concept of the value chain analysis in value creation can be used beyond the traditional manufacturing firms. In these firms the context of activities sequences are often linear and best suited into the value chain. This additional way to look at the activities in the firm will enable the activity-based view to be more adaptable for change and development of firms today (Stabell & Fjeldstad, 1998).

Furthermore, circular economy will also challenge Porter's, (1985, 1998) value chain. There is a change happening in traditional sectors like the manufacture and construction sector which have been usually described with a traditional value chain. The end products are going into the value chain after they meet their purpose, through recycling, remanufacturing and reuse of the material or resources used in the production (Velenturf et al., 2019). Consequently, activities in the ordinary value chain have started to change, but also the value chain itself has been changed. Circular economy and sustainable value creation will make firms change their activities to meet the future technology and the sustainable development goals (Velenturf et al., 2019).

3.3 Creating shared value

Creating shared value (CSV) is a term that was first introduced by Michael Porter and Mark Kramer in Harvard Business Review in 2006. They claimed that this way could be a potential link between corporate social responsibility and the creation of long lasting competitive advantages (Porter & Kramer, 2006).

In a TED presentation (TED, 2013) Michael Porter brings up that CSV could be a solution to the great challenges the world is facing. He states that we need to change the mindset surrounding capitalism. He explains the traditional capitalism as following: A coal plant earns money by producing energy that is polluting. A higher production yields higher profits, but also emissions. This business model is profiting by *creating* societal issues. However, the business model should focus on *solving* societal issues. Further, these are issues that cannot be solved by NGOs

alone nor governments. Since the resources in possession are too small to be scaled, thus making them dependent on private businesses (TED, 2013).

The concept of CSV can be defined as “policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates” (Porter & Kramer, 2011, p. 6). Furthermore, Porter & Kramer (2011) elaborates that the core of the concept is to focus on identifying and develop the connections between a societal and economical progression. They emphasize that the core business model should concentrate on addressing societal issues, challenges and needs.

To further build on the concept of how to create these shared values, the companies can create economical value by first addressing and creating societal value. The concept of creating shared value is redefining capitalism as formerly noted. By connecting corporations’ success with societal improvements, his opens up new opportunities to facilitate new needs, increase efficiency, create differentiation and expand markets (Porter & Kramer, 2011, p. 6).

To differentiate the term, Porter and Kramer (2011) emphasize that creating shared value is not equal to corporate social responsibility, philanthropy or sustainability. It is rather a new way to achieve economic success. They provides three ways of how this can be created:

1. Reconceiving products and markets

The largest need that is not being met, is the need that stems from society. By reconceiving products and markets, Porter and Kramer (2011) elaborates on that this can solve many of the problems society is facing. An example of this is how many grocery stores have changed their focus from quantity to a greater focus on nutrition. As a consequence, the needs of society is better met by companies as the can be more efficient than what the government can be. Still, there is a presumption that the companies must identify needs in society, utility, pros and potential harm which products can make. By utilizing a process like this, companies can meet needs in an emerging market, consequently leading to fundamental innovations (Porter & Kramer, 2011). For instance, microlending is an example of this, which has financially included people who prior to this could only dream about it (Porter & Kramer, 2011, p. 8).



2. Redefining productivity in the value chain

A company's value chain is something that is both influencing and is influenced by external factors. Examples of this are natural resources, health and security factors and working conditions. Issues can arise in the value chain which can contribute to extra costs for the company, thus an issue which could be solved by shared value creation arises. Examples of such could be located in a company's energy consumption and logistics where by using new packaging can cut costs and at the same time choose a product that is better for the environment. With logistics in mind, this issue could be solved by how one determine to transport the goods, as well as localization of production plants (Porter & Kramer, 2011, pp. 9-11). Consequently, there is a solution in optimizing the resources to create value both for the company and the environment by changing the activities. This way of creating shared value is focusing on improving internal operations that can improve cost efficiency, resource access, quality and productivity which can be reached through environmental improvements, better resource utilization, investment in employees and suppliers' capabilities (Porter et al., 2012, p. 3)

3. Enabling local cluster development

The productivity and innovation that is occurring in a corporation is subjected to different factors: such as geographical location and homogeneity among companies (Porter & Kramer, 2011). Clusters located in different geographical areas could for instance be educational programs and institutes of businesses. Further, these factors are decisive for productivity, innovation and competition power in a market. By taking a part in clusters and cluster development, corporations can enable the creation of shared value to improve productivity, as well as improve distances or issues located in the framework surrounding the clusters. A company which has achieved this is Nestlé which cooperates and develop localized producers (Porter & Kramer, 2011, pp. 12-14). This way of creating shared value is achieved through the external environment of the company where it improves the environment through investments in society. Further, it enhance local suppliers, institutes and infrastructure in ways that also increases corporations profitability (Porter et al., 2012, p. 3).

3.3.1 Measuring CSV

In order to measure the value created by a business model focusing on addressing societal needs and challenges, there are numerous factors to examine. Measuring CSV is distinctly different from other measurements, as it should be practically and



provide insightful information for improvement and innovation within the business' strategy area. Yet, it is essential for the business to have processes that are integrated in the core business model of the company—not only a one-time event or periodically happenings that measures something other than results. An integrated shared value strategy and measurement of this include four steps. This feedback loop is one of the central benefits for measuring shared value by providing an overview to understand and unlock further creation of shared value (Porter et al., 2012, p. 4).

The first step comprises how to identify the societal needs you want to solve, which demands a systematic examination of societal needs and the lack of those not being met. Further, this step also need to examine how this can overlap with the three different ways of creating shared value. The second step comprise of making a business case. After identifying the societal influence one can create by one or the three ways of creating shared value, the next step is to make a solid business case. The business model should be based on research and analysis of how societal improvement can affect the financial results in the company. Further, the company must track the progression in the next step. This can be done by comparing the development to the desired goals by examining resource utilization financial result compared to the expected. The final step includes measuring the results and use the new insight to locate new value. In this step the focus is towards validating the link between the expected link between societal results and companies' results to determine whether or not the use of resources through activities created shared value (Porter et al., 2012, p. 4).

4 Design and methods

4.0 Purpose of research

The purpose of this research is to examine which factors are important in the value chain given a circular economy. More precisely it will examine how the activities in such a value chain is characterized and how it might differ from a traditional linear economy. We will try to identify what characterize and differentiate the value chain given a business model that is focused towards a circular economy, and also examine how theory of CSV and SVC impact this. In a bigger research setting, our aim is to create key novel conceptions that can be further be built upon and more thoroughly examined in a bigger research setting.



4.1 Research design

We will conduct a single case study of AF Gruppen, building on a Gioia approach. This, reasoned in that the Gioia method seeks to discover novel concepts or processes by attempting to capture and model the informants' data. These concepts are defined as “precursors to constructs in making sense of organizational worlds” (Gioia et al., 2013). This method is of particular interest as it aims on finding first order concepts directly from its source in the interviews to analyze the findings in order to distinguish and locate similarities. This is done so it is possible to separate them into second-order concepts and themes. This is the basis for building a data structure and is the most pivotal step in the whole research process (Gioia et al., 2013).

According to Langley & Abdallah (2011), the Gioia approach suits the research the best when using a single case study and trying to capture the understanding of the informants in such a setting. We will try to identify how the different parts of AF Gruppen see its value chain to establish similarities and differences. Where a goal is to create first and second order concepts to discover a causal relationship among them.

4.2 Data collection

In order to determine how the value chain of AF Gruppen is constructed, and how the business model might impact it, we need to locate and determine the decision-makers and those responsible for this. Then, analyze this. For this reason, the unit of analysis will be the different activities in the value chain.

The data collection will happen through semi-structured interviews with employees in AF Gruppen. We want to interview different members of different divisions to better understand the value chain of AF Gruppen, and as these informants can be connected to different projects within AF Gruppen where circular economy is a high priority. A reason for choosing semi-structured interviews is to have the ability to elaborate on certain aspects, and yet ensure that there is a basis we will go through in all interviews conducted (Straits & Singleton, 2018). Furthermore, the method for data collection is chosen due to a desire to observe the informants speak freely without any interruptions.



There is no limit so far for how many informants we want to have, but the priority is to interview decision-makers and the ones with relevant positions in regard to what we wish to investigate. As such, as long as we have a sufficient number of informants to be ensured a satisfying answer to our research (Pratt, 2009). As this research is conducted alongside the WAVA-project, we intend on using personal recruitment—utilizing networks in the WAVA-project—where snowball sampling will be used (Straits & Singleton, 2018). However, there is a limitation to this in regard to time management and available resources, making quality over quantity an important contributor. In addition to using interviews to collect data, we will use additional sources to collect data, such as publicly accessible documents from AF Gruppen. If we are allowed to obtain access, we will also utilize internal documents that might shed light on factors of importance.

4.2.1 Interviews

In order to access an in-depth understanding of the value chain, value creation and business model our primary source of data will be conducted through semi-structured interviews. We intend to record all interviews with the consent from the informants and followed accordingly to regulations set by the NSD. This will simplify the coding of the data by enabling the possibility of transcribing the interviews once they are conducted, providing a data material as a wide as possible.

Furthermore, the anonymity of the informants will be kept accordingly to NSD regulations and desires from the informants—as well as how this information will be stored. We aim to have both of us attending during the interviews in order to prevent subjectivity and bias, but also ensure the data is sufficient and consistent in quality (Straits & Singleton, 2018). Further, as the pandemic is still occurring, all interviews will be conducted remotely by utilizing online chat platforms.

4.2.2 Interview guide

The intention of the interview guide is to establish and answer some of the statements we choose to examine in more detail. A reason for a semi-structured interview is to observe the informants talk freely within the provided topics, and to go in-depth in areas that are lacking. Another reason for this is to establish consistency in the research we are conducting, consequently that we will go through the same questions to ensure a minimum of reliable data. This will also allow us to have widely different interviews and conversations with different informants, while

staying within the topics needed in the research. In addition, the importance of having open questions cannot be stressed enough in order to not lead the informant on a certain path (Straits & Singleton, 2018).

4.2.3 Quality of research

4.2.3.1 Interview as method

The most common way to collect data in qualitative research is through interviews. This might be especially suitable when the investigated topic is not of a private and sensible nature. Furthermore, it is suitable with phenomena that are complex since it enables the informant to go more in-depth and provide answers in more detail (Straits & Singleton, 2018).

However, by using interview as a data collection point have some implications and challenges. Firstly, the researcher itself becomes a part of the setting when conducting the interviews, and as a consequence might affect the interview. Secondly, the researcher's prior knowledge will affect the discussion during the interviews but also the interpretation of answers. Thirdly, the relationship between the informant and the interviewer might also affect the interpretation of the interview, and can lead to subjectivity. By using the same interview guide on all informants with an aim on asking the same questions to the degree it can be deemed natural, we will have comparable data (Straits & Singleton, 2018).

4.2.3.2 Data analysis

When analyzing the data it is important to have a clear view and understanding of the purpose of the research. The analysis consists of categorizing, examining and combining data to answer the research question. There is no clear strategy nor universal method for analyzing the data to follow when conducting a case study. Therefore, it is crucial to have a thoroughly and detailed approach to what will be analyzed (Yin, 2003). The data analysis will happen concurrently with the gathering of data. As a foundation of data collection both the research question and topic are essential, and this strategy is dependent on them. However, regardless of which strategy is followed, the importance is towards securing the highest quality possible (Yin, 2003). In order to secure this Yin (2003) elaborates on four different principles to follow:

1. Construct validity: the analysis must be reasonable to all findings.
2. Internal validity: the analysis must try to address opposing interpretations.



3. External validity: the analysis must examine the most significant and important characteristics of the study.
4. Reliability: the researcher must use its own expertise in the study.

Furthermore, we intend on using grounded theory as it offers a systematic method to shape and handle qualitative data. It is a theory that is concentrated on data that is gathered and analyzed through field research. In addition, the data collection, analysis and theory can all happen simultaneously and are all related to each other (Straits & Singleton, 2018).

4.2.3.3 Reliability

How the data is collected, used and analyzed indicates the accuracy of the data which is considered as the reliability of the data. In simpler terms, this is how the data can be considered trustworthy. By fulfilling desires of reliability, the same research conducted by other researchers should be able to conclude with the same results. In a qualitative research setting reliability is not created the same way as in a quantitative setting, due to how the data collection is structured and how it is more dependent on the context. As a consequence, it is important to describe the methods used in detail so that the reader will understand the process (Straits & Singleton, 2018). Therefore, we have tried to make our method as transparent as possible, and there is no connection between the authors and the company investigated.

4.2.3.4 Validity and the generalizability

Validity can be divided into two different parts: internal validity, which says something about the trustworthiness of the research, and external validity which says something about the transferability of the research. The internal validity in qualitative research is bound by to what extent the researchers' approaches and findings reflect the aim of the study and represents the reality (Singleton & Straits, 2018). Transferability is used as a certification of whether or not the results can be transferred to other studies or not. It is necessary to collect data in a valid way and have solid arguments given the empirical setting when trying to generalize the findings (Singleton & Straits, 2018).

4.2.3.5 Objectivity

Objectivity says something about how possible it is for other researchers to confirm the same results in similar studies. Yet again, the importance of being transparent and open regarding the methodology must be emphasized. By doing this, it is



possible to be ensured that we will sustain an objective approach to the study and research (Straits & Singleton, 2018). The data will be collected, transcribed, and confirmed by the informants after the interviews are conducted to ensure objectivity (Straits & Singleton, 2018).

5 Ethical considerations

Ethical considerations are of great importance in business research. There are three central areas in which research ethics focuses on: data collection and analysis, the treatment of human objects and the responsibility to society (Straits & Singleton, 2018). Furthermore, it is important to emphasize how creating a safe and trustworthy environment for the informant is, both during the interview and in the stages after it is conducted (Crow et al., 2006).

To fulfill desires of ethical considerations we follow certain principles in order to avoid harming individuals in the research. To protect the anonymity of the informant, quantitation and referencing is done carefully to prevent the informants identifiable. Following guidelines, templates and approval from NSD, all informants will be informed of the study and what it aims to seek—as for their reason for the invitation to the study (NSD, n.d.). This consent requires the informants' signature, and is stored adequately to NSD's regulations on storage of information. Another topic regarding ethical considerations is invasion of privacy. We work our best on preventing framing of questions and prevent bias to affect the answers given (Straits & Singleton, 2018). The transcribed data has also been resent to the informants in order to ensure that nothing is misinterpreted, and that the informants acknowledge the data. This level of transparency is also desired as aforementioned due to the prevention of deception of the research, which would present our research as something it is not.

6 Project organization, management and timeline

This section explains how the time management for the thesis looks like. The research and thesis will be conducted by the two authors of this thesis, the deadline of the thesis is at July 1st 2021. To organize the project in a visual representation, the Gantt chart below is utilized to provide an overview of important happenings and consecutive deadline dates. The chart is subjected to change, but will be followed as closely as possible.



Activity	Week 1-4	Week 5-7	Week 8-15	Week 16-25	Week 26
Literature review					
Set up interviews					
Finish interview guide					
Conduct interviews					
Code interviews					
Analyze the data					
First draft					
Finish paper					



References

- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Bocken, N. M. P., de Pauw, I., Bakker, C., & van der Grinten, B. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, 33(5), 308–320. <https://doi.org/10.1080/21681015.2016.1172124>
- Brundtland Commission. (1987). *Our Common Future*. Oxford: Oxford University Press. <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- Bygballe, L. E., Flygansvær, B., & Harrison, D. (2019). *Recycling in the city: Mobilising resources in initiating a circular economy in the construction sector*. IMP Conference, Paris. <https://www.impgroup.org/uploads/papers/11029.pdf>
- Crow, G., Wiles, R., Heath, S., & Charles, V. (2006). Research Ethics and Data Quality: The Implications of Informed Consent. *International Journal of Social Research Methodology*, 9(2), 83–95. <https://doi.org/10.1080/13645570600595231>
- Ellen Macarthur Foundation. (n.d.). *What is the circular economy?* Retrieved January 4, 2021, from <https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy>
- Ellen Macarthur Foundation. (2013a). *Towards the Circular Economy, vol. 1: Economic and business rationale for a circular economy*. Cowes: Ellen Macarthur Foundation. <https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Ellen-MacArthur-Foundation-Towards-the-Circular-Economy-vol.1.pdf>
- Ellen Macarthur Foundation. (2013b). *Towards the Circular Economy, vol. 2: Opportunities for the consumer goods sector*. Cowes: Ellen Macarthur Foundation.



https://www.ellenmacarthurfoundation.org/assets/downloads/publications/TCE_Report-2013.pdf

- Ellen Macarthur Foundation. (2014). *Towards the Circular Economy, vol. 3: Accelerating the scale-up across global supply chains*. Cowes: Ellen Macarthur Foundation.
<https://www.ellenmacarthurfoundation.org/assets/downloads/publications/Towards-the-circular-economy-volume-3.pdf>
- Geissdoerfer, M., Savaget, P., Bocken, N. M. P., & Hultink, E. J. (2017). The Circular Economy – A new sustainability paradigm? *Journal of Cleaner Production, 143*, 757–768.
<https://doi.org/10.1016/j.jclepro.2016.12.048>
- Ghisellini, P., Cialani, C., & Ulgiati, S. (2016). A review on circular economy: The expected transition to a balanced interplay of environmental and economic systems. *Journal of Cleaner Production, 114*, 11–32.
<https://doi.org/10.1016/j.jclepro.2015.09.007>
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2013). Seeking Qualitative Rigor in Inductive Research: Notes on the Gioia Methodology. *Organizational Research Methods, 16*(1), 15–31.
<https://doi.org/10.1177/1094428112452151>
- Hertwich, E., Lifset, R., Pauliuk, S., Heeren, N., Ali, S., Tu, Q., Ardente, F., Berrill, P., Fishman, T., Kanaoka, K., Kulczycka, J., Makov, T., Masanet, E., & Wolfram, P. (2019). *Resource Efficiency and Climate Change: Material Efficiency Strategies for a Low-Carbon Future*. Zenodo. <https://doi.org/10.5281/ZENODO.3542680>
- K. Weinberger, H. Rankine, N. Amanuma, L. Surendra, H. Van Hull, Tira Foran, R. Reyes, A. Malik, & J. Murray. (2015). *Integrating the three dimensions of sustainable development: A framework and tools*.
<https://doi.org/10.13140/RG.2.1.1334.6325>
- Langley, A., & Abdallah, C. (2011). Templates and Turns in Qualitative Studies of Strategy and Management. In D. D. Bergh & D. J. Ketchen (Eds.), *Research Methodology in Strategy and Management* (Vol. 6, pp. 201–235). Emerald Group Publishing Limited.
[https://doi.org/10.1108/S1479-8387\(2011\)0000006007](https://doi.org/10.1108/S1479-8387(2011)0000006007)



- Murray, A., Skene, K., & Haynes, K. (2017). The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context. *Journal of Business Ethics*, *140*(3), 369–380. <https://doi.org/10.1007/s10551-015-2693-2>
- NSD. (n.d.). *Samtykke*. NSD Personverntjenester. Retrieved December 15, 2020, from <https://nsd.no/personvernombud/hjelp/samtykke.html>
- Nußholz, J. L. K., Rasmussen, F. N., & Milios, L. (2019). Circular building materials: Carbon saving potential and the role of business model innovation and public policy. *Resources, Conservation and Recycling*, *141*, 308–316. <https://doi.org/10.1016/j.resconrec.2018.10.036>
- Nußholz, J. L. K., Rasmussen, F. N., Whalen, K., & Plepys, A. (2020). Material reuse in buildings: Implications of a circular business model for sustainable value creation. *Journal of Cleaner Production*, *245*, 118546. <https://doi.org/10.1016/j.jclepro.2019.118546>
- Porter, M. E. (1985). *Competitive advantage: Creating and sustaining superior performance*. Free Press.
- Porter, M. E. (1996). What is strategy? *Harvard Business Review*, *74*(6), 61–78.
- Porter, M. E. (1998). *Competitive advantage: Creating and sustaining superior performance: With a new introduction* (1st Free Press ed.). Free Press.
- Porter, M. E., Hills, G., Pfitzer, M., Patscheke, S., & Hawkins, E. (2012). *Measuring shared value: How to unlock value by linking social and business results*. FSG: Boston, MA.
- Porter, M. E., & Kramer, M. R. (2006). *The link between competitive advantage and corporate social responsibility* (12 No. 84; pp. 78–92). Harvard business review.
- Porter, M. E., & Kramer, M. R. (2011). *The Big Idea: Creating Shared Value* (No. 89; pp. 2–17). Harvard Business Review.
- Pratt, M. G. (2009). From the Editors: For the Lack of a Boilerplate: Tips on Writing up (And Reviewing) Qualitative Research. *The Academy of Management Journal*, *52*(5), 856–862. JSTOR.



- Richardson, G. B. (1972). The organisation of industry. *The Economic Journal*, 82(327), 883–896.
- Rosa, W. (Ed.). (2017). Transforming Our World: The 2030 Agenda for Sustainable Development. In *A New Era in Global Health*. Springer Publishing Company.
<https://doi.org/10.1891/9780826190123.ap02>
- Sheehan, N. T., & Foss, N. J. (2009). Exploring the roots of Porter’s activity-based view. *Journal of Strategy and Management*.
<https://doi.org/10.1108/17554250910982480>
- SSB. (2020, April 2). *Avfallsregnskapet*. ssb.no. <https://www.ssb.no/natur-og-miljo/statistikker/avfregno/aar/2020-04-02>
- Stabell, C. B., & Fjeldstad, Ø. D. (1998). Configuring value for competitive advantage: On chains, shops, and networks. *Strategic Management Journal*, 19(5), 413–437.
- Straits, B. C., & Singleton, R. (2018). *Social research: Approaches and fundamentals* (International Sixth Edition). Oxford University Press.
- TED. (2013). *Michael Porter: Why business can be good at solving social problems*. <https://www.youtube.com/watch?v=0iIh5YYDR2o>
- UNEP. (2016). *Global Material Flows and Resource Productivity*.
<https://www.resourcepanel.org/reports/global-material-flows-and-resource-productivity-database-link>
- Velenturf, A. P. M., Archer, S. A., Gomes, H. I., Christgen, B., Lag-Brotons, A. J., & Purnell, P. (2019). Circular economy and the matter of integrated resources. *Science of The Total Environment*, 689, 963–969. <https://doi.org/10.1016/j.scitotenv.2019.06.449>
- Webster, K. (2017). *The circular economy: A wealth of flows* (Second edition). Ellen MacArthur Foundation Publishing.
- Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171–180.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed). Sage Publications.