

Implementation of Green Business Models in SME's

- A Case Study of Turning Attitude into Action

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Abstract

Mankind is facing a series of challenges brought on by climate change and other environmental issues. If we are to mitigate these challenges, there is a need for action. One of the potential contributing solutions is circular economy, which according to some studies, can reduce the industrial emissions within the EU by more than 50%. The EU has taken notice of the possible benefits of circular economy, and have launched a Regional Fund Programme, which includes fundings to develop green business models in small and medium-sized enterprises (SME's) in Denmark. However, if these green business models are to mitigate environmental issues, they must also be implemented, which has led to the research question of this thesis: How can implementation science be used to understand and facilitate implementation of green business models in SME's in order to optimize their use of energy and resources?

In order to answer the research question the thesis includes a multiple case study of SME's and operators involved with the EU Regional Fund-programme. The cases are analyzed by drawing on various implementational aspects of two implementation frameworks and one implementation theory. Based on the analysis, and a discussion of the findings, the thesis concludes that in combination the two implementation frameworks and the implementation theory provide a useful approach to understand significant aspects of implementing green business models in SME's. In regards to using implementation science to facilitate implementation of green business models in SME's there are strengths as well as weaknesses. The strengths of the implementation frameworks and theory used in this thesis, lies in their ability to address various aspects of implementing green business models, that may be important for the SME's to consider. The weakness of the frameworks and theory lies in their generic approach, which is not ideal for the SME's, given that they face different challenges depending on the type of SME e.g. production or service, and their overall familiarity with green business models.

Key-words of the thesis: green business models, implementation, circular economy, environmental issues, climate change.

Foreword

I have never really put much effort in writing the foreword of the projects I have handed in during my five years of studying at Aalborg University. However, given that this is my last hand-in I thought I would give it a shot. When I first started at Aalborg University I took my bachelors degree in geography. The closest thing I have to a passion is being in nature and wonder of all its phenomenons and beauty, and so I wanted to learn more about it. And I sure did learn. After three years of studying I had been introduced to an overwhelming amount of environmental disasters, and I was drained. I took a year off and traveled the world with my fiancé to experience the secluded beaches of New Zealand, the beautiful snowy mountains of Japan and the rainforests of Indonesia. It was an amazing trip, and I got my energy back. My desire to go back to the university had been rekindled. But I did not want to continue studying geography. The study of natural geography is mainly about finding solutions to existing environmental problems. Although this is an important field of work, I could not see myself plugging leaks for the rest of my career. That is why I applied for Environmental Management & Sustainability Science. Rather than plugging leaks, the programme focuses a lot more on avoiding leaks in the future.

Although I have gained a lot from my years at Aalborg University, it has not been without difficulty. School never suited me - or rather I did not suit it. When it comes to education I have always subscribed to the words of Socrates:

“Education is the kindling of a flame - not the filling of a vessel”.

I know that Aalborg University aims for a study environment, that embraces curiosity, but in my opinion they often miss the mark. Far too often the curiosity drowns in exams, grades and supervisors who far too often direct projects in stead of guiding them.

So why am I writing this? I mean - how clever is it to criticize my university and its supervisors in the foreword of my master thesis? I will tell you why. Because the supervisor of my last two semesters has been the best supervisor during my entire time at Aalborg University. Thank you, Lone Kørnøv, for your supervision over the last year. Thank you for understanding what it means to supervise. Thank you for providing guidance rather than imposing your own beliefs. Thank you for building on ideas rather than tearing them down. I have truly enjoyed our meetings for their informality and because I always felt treated like an equal.

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1.0 The Need for Action

In the spring of 2019 the election for the Danish Parliament was initiated. During the election campaign it became obvious that the political focus towards environmental issues and climate change had shifted. According to surveys, voters now believed climate and environment to be among the most important issues on the political agenda (Bahn, 2019). The environmental concern of the voters had not gone unnoticed by the politicians. Most of the political parties were very active in explaining how they believed Denmark should contribute to mitigating environmental impacts in the future (Nielsen, 2019). The following is a short run-down of the various political goals of the political parties in response to environmental issues and climate change:

Stopping the sale of fossilized cars by 2030, more research on reducing the impacts of agriculture, establishing a climate-law with binding goals, freeing Denmark from fossil fuels by 2045 (or 2035 depending on the party), more research in energy, changing taxations to favor green cars, adding CO₂ taxation to the agricultural industry, more green collective transportation, one million green cars on the streets by 2030, more climate research, removing or lowering taxation on green electricity, adding CO₂ taxation to all products etc. (Nielsen, 2019).

In conclusion, there is no shortage of political ambition in regards to dealing with environmental issues and climate change. However, some would argue that what politicians say and what they do are two very different things. This opinion has especially been voiced by Swedish climate activist, Greta Thunberg, who decided to protest against the lack of political action by skipping school in order to sit in front of the Swedish Parliament during the Swedish election. Since her protest Greta Thunberg has inspired students across the world to demonstrate on the lack of political action, and recently she was also invited to speak to the EU Parliament (Rahim, 2019).

“I ask you to please wake up and make the changes required possible. To do your best is no longer good enough. We must all do the seemingly impossible. And it's okay if you refuse to listen to me. I am, after all, just a 16-year-old schoolgirl from Sweden. But you cannot ignore the scientists, or the science, or the millions of school-striking children who are school-striking for the right to a future. I beg you: please do not fail on this” (Thunberg, 2019).

Since Greta Thunberg and her fellow students across the world began to voice their dissatisfaction, they have been met with support from the scientific community working with climate change. More than 4.000 scientists was behind an appeal released in Science Magazine, where they supported the protesting students (Hagedorn et al., 2019).

“We approve and support their demand for rapid and forceful action. We see it as our social, ethical, and scholarly responsibility to state in no uncertain terms: Only if humanity acts quickly and resolutely can we limit global warming, halt the ongoing mass extinction of animal and plant species, and preserve the natural basis for the food supply and well-being of present and future generations. This is what the young people want to achieve. They deserve our respect and full support” (Hagedorn et al., 2019).

There is indeed a cry for action to mitigate environmental impacts and climate change. This raises the questions as to who should act, and how should they act? Is it just the politicians who have the power and potential for mitigating global warming and environmental disasters?

2.0 The State of The Environment

Over the years phenomena like global warming, biodiversity loss, deforestation etc. has become more and more dominant in the media and on the political agenda. Scientists agree now more than ever, that the challenges we face in terms of global warming are manmade (UNEP, 2019). The same tendencies can be seen in the political landscape, with the Paris Agreement representing an international political acknowledgment of the issues we are facing in regards to global warming. However, with the media overflowing with one “breaking-news” story after another, describing environmental disasters, it can be difficult to navigate through the environmental issues, especially when the stories also include several stake-holders who either agree or disagree with the stories. This raises the question: how bad is it - really?

Since 1997 the United Nations Environment Programme (UNEP) has published six reports entitled Global Environment Outlook (GEO). Each publication has served as a flagship for environmental assessment for decision-makers and other stakeholders. The last publication in the series (GEO 6) was launched in 2019 with the subtitle: “Healthy Planet, Healthy People”. In terms of environmental issues, the report addresses the issues related to air, biodiversity, oceans and coasts, land and soil, fresh water and other cross cutting issues (UNEP, 2019).

The emissions generated by human activity are linked to climate change, air pollution and ozone depletion. Air pollution is believed to be the cause of 6 - 7 million premature deaths per year, and areas with rapid urbanization are especially affected in this matter. Since 1880 the global temperature has increased by approximately 0,8 - 1,2 degrees Celsius, and eight of the ten warmest years on record have occurred within the last decade. If the development in global temperatures persists it will not be possible to stay within the temperature limits set out by the Paris Agreement sometime between 2030 and 2052. So far, the national initiatives for staying well below 2 degrees Celsius above pre-industrial levels, only constitutes a third of the mitigation needed to fulfill the Paris Agreement. In order to maintain a good chance of keeping temperature rises well below 2 degrees Celsius, the global emissions have to be reduced by 40 - 70 percent between 2010 and 2050, falling to net zero by 2070 (UNEP, 2019).

In terms of biodiversity a major species extinction is currently unfolding. The importance of biodiversity is significant. It plays an important role in regulating the climate, filtering the air and water, soil formation and mitigating impacts that are caused by natural disasters. Furthermore, it provides a lot of resources that benefit the physical as well as the mental health of humans. The species extinction rates are increasing, and today “42 per cent of terrestrial invertebrates, 34 per cent of freshwater invertebrates and 25 per cent of marine invertebrates are considered at risk of extinction” (UNEP, 2019). The driving forces behind the loss of biodiversity can be attributed to loss and changes of habitats along with unsustainable agricultural practices, the spread of invasive species, pollution and overexploitation. Although there has been some improvements in terms of protecting biodiversity through governance efforts, the loss of biodiversity is still happening at an accelerating rate, which stresses the need for further efforts to be made in order to alter the current course (UNEP, 2019).

Oceans and coasts are also facing a number of environmental challenges, which are mainly brought on by ocean warming and acidification along with ocean pollution and the increasing use of coasts for “production, transportation, settlement, recreation, resource extraction and energy production” (UNEP, 2019). The environmental impacts on oceans and coasts can be

seen in degradation and disturbances of marine and coastal ecosystems. It is possible that the environmental impacts on oceans and coasts can lead to a destructive cycle of degradation, which can lead to the oceans no longer providing the ecosystem services that are vital to mankind e.g. livelihoods, income, health, employment etc. Currently, aquaculture generates US\$ 252 billion annually, and 58 - 120 million people's livelihoods depend on small-scale fisheries (UNEP, 2019).

In terms of land and soil, 50 percent of the habitable land is currently being used for food production, and in order to feed a future population of 10 billion people, the food production needs to increase by 50 percent. 29 percent of the global land is identified as degradation hotspots, in which 3,2 billion people reside. Deforestation is another problem related to land use. Many countries have taken steps to increase their forest cover, however this is primarily done through plantations and reforestation, which is unlikely to provide the same range of ecosystem services as those provided by natural forests (UNEP, 2019).

Fresh water is one of the most important resources on earth, and population growth and water pollution are increasing the pressure on fresh water resources across the globe. The pressure is increased through climate change, which has led to water scarcity, drought and famine. Furthermore, extreme natural events has led to problems with fresh water quality as well as quantity. Since 1990 the water quality in most regions has declined, and approximately 2,3 billion people lack access to safe sanitation. An estimated 1,4 million people die annually as a result of diseases that are associated with polluted drinking water and inadequate sanitation. Without countermeasures, poor fresh water quality may become a serious cause of death and diseases across the world by 2050 (UNEP, 2019). However, the access to basic drinking water services has increased. "1.5 billion people gained access to basic drinking water services over the 15-year period from 2000 to 2015" (UNEP, 2019).

Without a change in policies the projected environmental issues will continue and mankind will fail to meet the goals of the Paris Agreement as well as the Sustainable Development Goals (SDG's). Our current ways of consuming and producing coupled with the increasing population is not sufficient to reverse the environmental issues we are facing (UNEP, 2019). The GEO 6 report states that it is still possible to interfere with the current trends of environmental issues before they reach an irreversible state, however if this is to be achieved mankind needs to act, and we need to act sooner rather than later (UNEP, 2019).

2.1 What to do?

There is no doubt that the attention towards environmental issues is increasing (Bahn, 2019). On a more or less daily basis the media brings stories that are somehow related to the environment. A hypothetical example could be the media describing the latest research on increased plastic waste in the oceans. This is then followed by a series of reactions from politicians with various opinions on how to solve the problem; and whose fault it is. Then comes a story of a family with two kids, explaining how they have eliminated plastic from their everyday lives. Finally, comes a story of a company who have reduced their usage of plastic over the years. Although this scenario is hypothetical it is definitely not far-fetched. With this many stakeholders related to environmental issues, it is often debated who is to blame and who should take action?

Some would argue that the most effective way of addressing environmental issues is to act on a political scale. One of the areas that the danish politicians often refer to when it comes to dealing with environmental issues, is energy. This is no surprise given that Denmark is one of the leading countries in the world when it comes to renewable energy. In 2017 43,4% of energy used in Denmark came from windmills, and the World Energy Council elected Denmark for having the world's best energy system. The danish government has set out a goal that 50% of the danish energy use must come from renewable energy, and by 2050 Denmark should be completely independent from fossil fuels (Energi-, Forsynings- og Klimaministeriet, 2018 A). In 2018 the danish government along with several other parties signed a new energy agreement that included the construction of three new off shore wind farms each with an output of at least 800 megawatts, which would make them among the largest in Europe (Energi-, Forsynings- og Klimaministeriet, 2018 B). Unfortunately, the environmental issues we are facing goes well beyond the danish energy system, and various stakeholders have criticized the danish politicians for not doing enough to engage the environmental issues we are facing (Hagedorn et al., 2019).

However, some would argue that we cannot just leave the future of our planet to the politicians; we as citizens also have a responsibility to the environmental issues we are facing and that we are able to make a difference by being more selective about our overall lifestyle. In Denmark it would appear that this way of thinking has taken hold to some extent. For example it is estimated that the amount of vegetarians and vegans has increased from 1.8 % in 2017 to 2.4 % in 2019 (Vegetarisk Forening, 2017), and vegetarian restaurants in Denmark has increased by more than 500 % since 2010 (Nørgaard, 2019). The Danes have also begun to reuse more than previously. In 2018 the thrift shops had an estimated revenue of 7.2 billion DKK as opposed to 5.6 billion DKK in 2016, which can be attributed to a more conscious way of consuming as well as the fact that reusing products has become more convenient through various digital platforms. In most cases, the consumption of products represent the final stage in the supply chain before being discarded as waste or perhaps recycled (Hansen, 2018).

The final products and services that are being provided, are often part of a comprehensive intricate value chain. In a supply chain there is often potential for reducing the environmental footprint of the final product or service. The supply chain is already somewhat regulated from a political aspect through rules and regulations e.g. However, with the increased environmental awareness among the general public, several companies have undergone voluntary changes to address environmental issues. Environmental considerations have often been viewed as a constraint for companies, but now it seems that some companies are beginning to view green business as good business. One concept in particular has gained awareness over the years, as it advocates for the possibility to run a healthy business without putting a strain on the environment. The concept is known as circular economy.

2.2 Introducing circular economy

The concept of circular economy cannot be traced back to a single source, but it has gained momentum since the late 1970's. Today, the Ellen MacArthur Foundation presents circular economy as a conglomerate of various schools of thought, including: "functional service economy (performance economy) of Walter Stahel; the Cradle to Cradle design philosophy of William

McDonough and Michael Braungart; biomimicry as articulated by Janine Benyus; the industrial ecology of Reid Lifset and Thomas Graedel; natural capitalism by Amory and Hunter Lovins and Paul Hawken; and the blue economy systems approach described by Gunter Pauli” (Ellen MacArthur Foundation, n.d. A). The Ellen MacArthur Foundation describes circular economy it as:

“Looking beyond the current take-make-waste extractive industrial model, a circular economy aims to redefine growth, focusing on positive society-wide benefits. It entails gradually decoupling economic activity from the consumption of finite resources, and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital” (Ellen MacArthur Foundation, n.d. B).

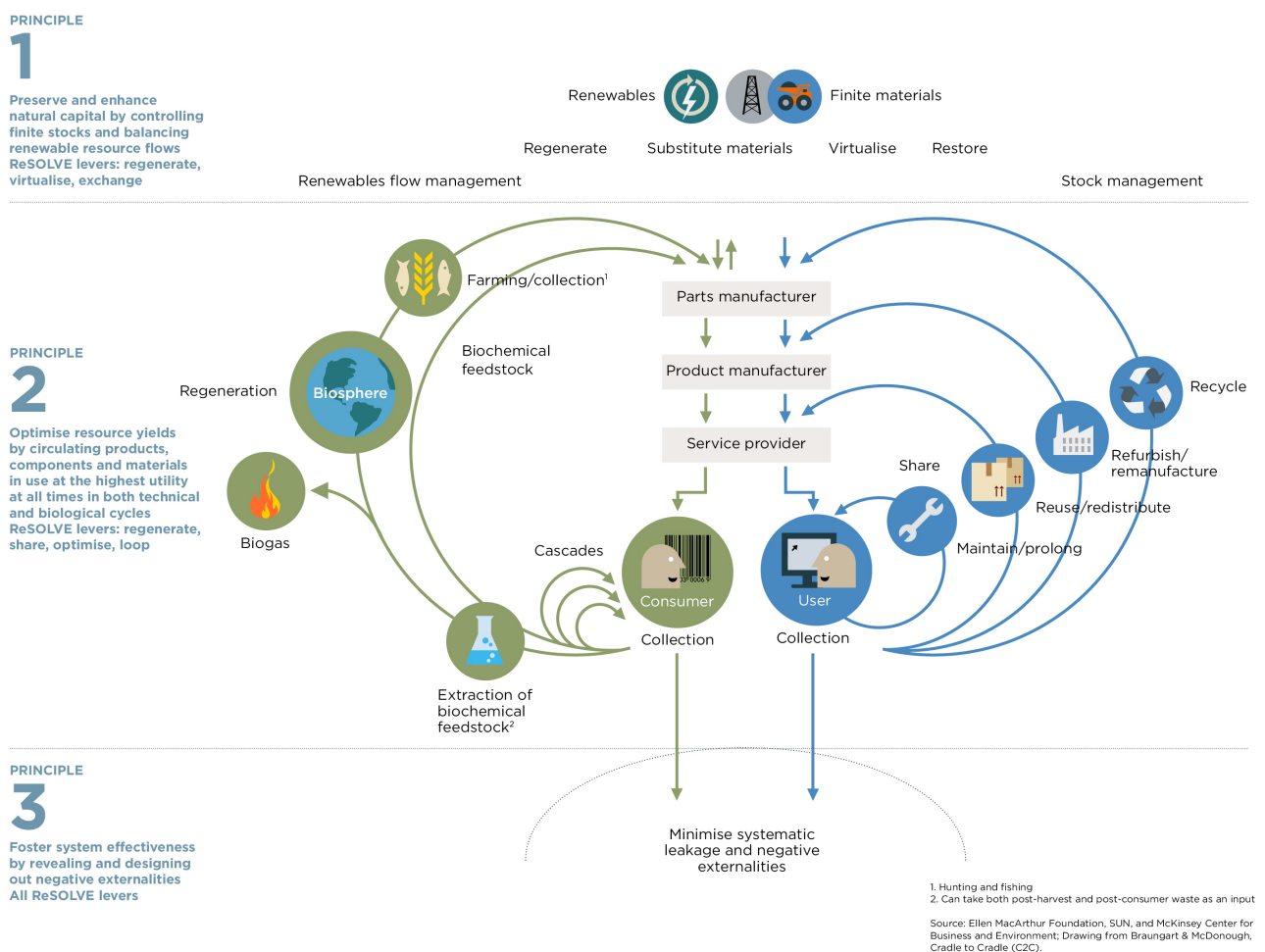


Figure 1: Circular Economy System Diagram (Ellen MacArthur Foundation, n.d. B)

Circular economy recognizes the importance of economy, but challenges the system on which it is built by offering an alternative approach. The concept of circular economy (as illustrated in Figure 1) is to design out waste in a system which is based on renewable energy. Circular economy distinguishes between a biological and a technical cycle. In the biological cycle, food and other biologically-based materials e.g. cotton and wood are designed to be reintroduced to the system through feedback systems such as composting and anaerobic digestion, which will rege-

nerate living systems and thereby providing renewable resources for the economy. In the technical cycle products and other materials are designed in a way that will keep them in the smallest loop possible (Ellen MacArthur Foundation, n.d. B).

Circular economy represents a potential solution to some of the environmental issues that faces mankind, but what are the potentials in regards to mitigating environmental impacts and climate change. According to a study made by the Finnish Innovation Fund Sitra and the European Climate Foundation, circular economy could potentially play an important role in achieving the goals of the Paris-Agreement. According to the study, adopting circular economy in the EU could reduce industrial emissions by more than 50% by 2050 (UNFCCC, 2018). Another study made by Deloitte found that in the EU, the potential savings by adopting circular economy could lead to a reduction of 13% - 66% CO₂ eq per year, depending in the industrial sector (Deloitte, 2016).

Today, circular economy has been adopted in various policies in various forms by companies as well as politicians and political institutions. The concept of cradle to cradle has been developed into a certification scheme (Vugge til Vugge, n.d.), and elements of circular economy can also be found in political strategies as described in the following section.

2.3 The EU Regional Fund

In 2007 the financial crisis struck the global financial market. The financial crisis served as a wake-up call for the European Union, as it destroyed years of economic and social progress and exposed the weakness of the European economy. In order to prevent a similar scenario from reoccurring, and in order to accommodate future challenges such as ageing population, climate changes and global competition, the EU developed a strategy entitled: EUROPE 2020 - A strategy for smart, sustainable and inclusive growth (European Commission, 2010). The strategy contains three mutually enforcing priorities:

- “Smart growth: developing an economy based on knowledge and innovation.
- Sustainable growth: promoting a more resource efficient, greener and more competitive economy.
- Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion” (European Commission, 2010).

In a contribution to the Europe 2020 Targets the European Development Fund has launched a programme entitled Innovation and Sustainable Growth in Businesses, which is aimed at boosting economic growth in Denmark (Erhvervsstyrelsen n.d.). The programme is divided into four areas of priority which is described as priority-axes (see Table 1).

Table 1: The Regionalfond's priority-axis and its relation to the EU 2020-goals (Erhvervsstyrelsen n.d.)

Priority-axis 1 Strengthened innovation in SME's	Priority-axis 2 More companies in growth	Priority-axis 3 Energy- and resource efficient SME's	Priority-axis 4 Sustainable green urban development
Research and development must represent 3 % of GDP.	Structural employment rate at 80 %.	Emissions in the non-regulated sectors must be gradually reduced by up to 20% towards 2020 compared to 2005	Emissions in the non-regulated sectors must be gradually reduced by up to 20% towards 2020 compared to 2005

As previously mentioned, more and more companies are adopting a more positive attitude towards becoming more green. This is also one of the priorities of the programme, which can be seen through the goals of Priority-axis 3. The purpose of Priority-axis 3 is to improve the energy-and resource efficiency in SME's, which will make the businesses more competitive and generate more jobs (Erhvervsstyrelsen n.d.).

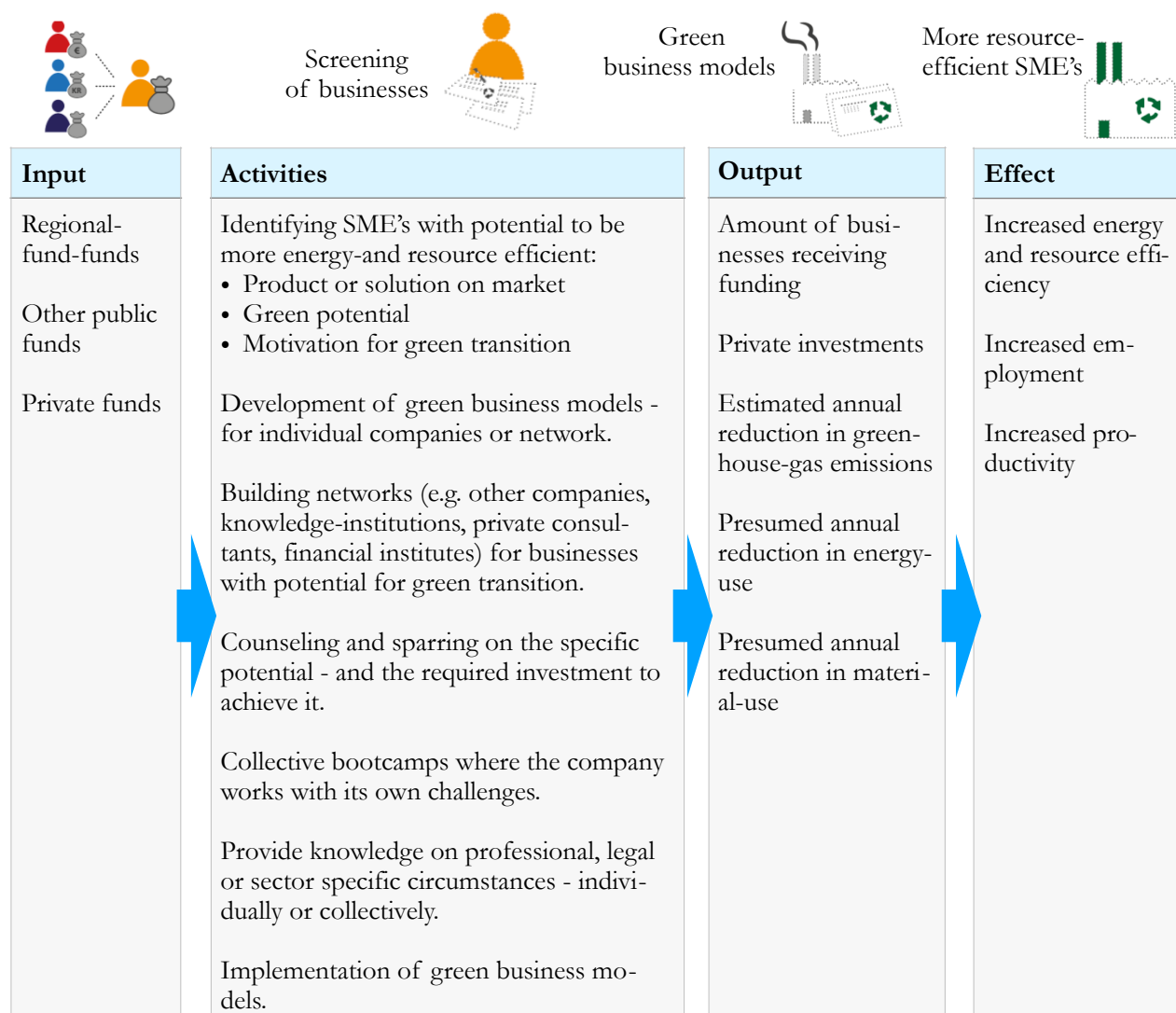


Figure 2: Chain of effects in Priority-axis 3 (Erhvervsstyrelsen n.d.).

The individual regional fund projects are anchored at individual operators, who are responsible for administrating the projects, which includes identifying potential SME's for the projects. As illustrated in Figure 2 the overall goal of Priority-axis 3 is to identify SME's that holds a potential for adopting a green business model.

The concept of a green business model is not specified in the programme, other than it “contributes in improving resource- or energy efficiency” (Erhvervsstyrelsen n.d.). However, the programme also mentions that: “The potential of the individual SME must be so great that it is likely that the SME/network will generate a significant and measurable improvement of the resource- and energy efficiency” (Erhvervsstyrelsen n.d.). In terms of implementation the programme does not specify how to ensure it. Rather, the programme states that the individual projects are not required to contain funding for implementation (Erhvervsstyrelsen n.d.). At a practical level this translates into that the SME's involved with the projects will be helped in developing their green business models, but they will not necessarily be helped in implementing them. One could argue that implementation is the most important element of the entire process, as the efforts otherwise may have been in vain, leading to neither the SME or the environment benefitting from the efforts. This raises the question on how to ensure successful implementation of green business models?

2.4 Implementation science

In order to understand how to successfully implement green business models, it is relevant to look into the field of implementation science. When first diving into the field the sheer amount of theories and frameworks can be overwhelming. Implementation theory is not a single universal theory. There are several theories on implementation, with different approaches. Some of them focus on the process of implementation whereas others are more concerned with the outcomes of implementation. The same applies to the origins of implementation theory. Some

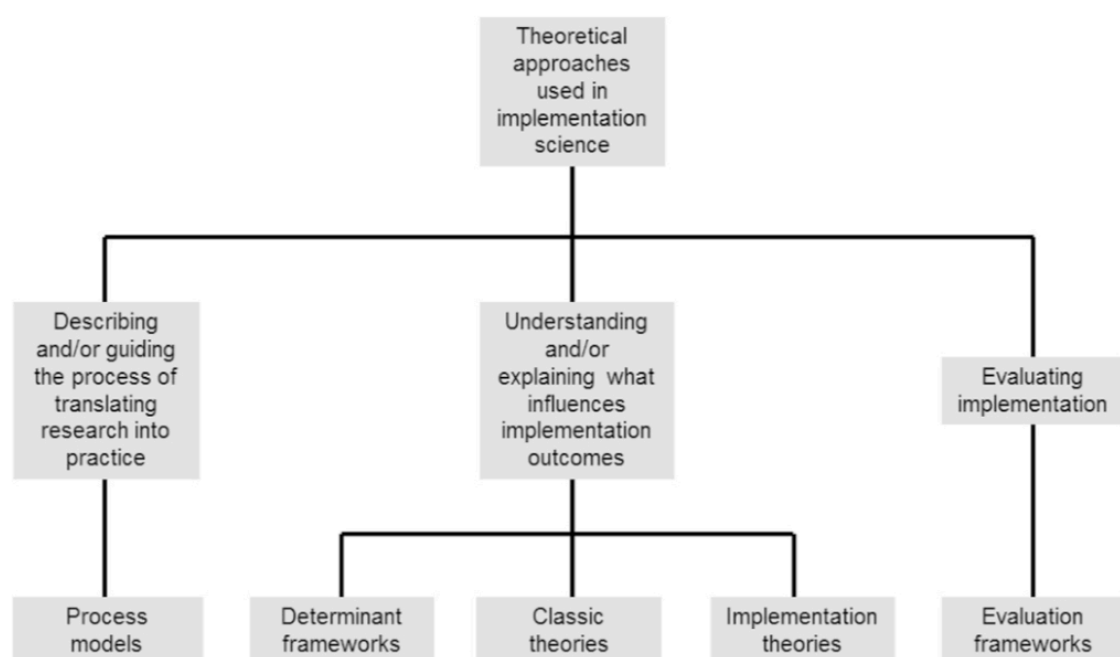


Figure 3: Nilsen's taxonomy of implementation theories and frameworks (Nilsen, 2015).

theories have been developed within the field of implementation science, and others have been borrowed from fields stretching from psychology to organizational theory (Nilsen, 2015). Fortunately, the Swedish Professor Per Nilsen, who works with implementation science, has developed a taxonomy that distinguishes between different categories of theories (see Figure 3). The taxonomy presents three overall purposes of the use of theories, models and frameworks within the field of implementation science: “(1) describing and/or guiding the process of translating research into practice, (2) understanding and/or explaining what influences implementation outcomes and (3) evaluating implementation” (Nilsen, 2015). Furthermore, Nilsen argues that the theoretical approaches that seeks to understand and/or explain influences on implementation outcomes (i.e. the second category), can be further subdivided into three categories, due to their origins, their development and their overall applications in implementation science (see Figure 3) (Nilsen, 2015). As described in Nilsen’s taxonomy there is a variety of implementation theories and frameworks, which has been applied in a broad spectrum of academic fields, which makes it relevant to examine if it has also made its way to green business models and circular economy.

2.5 Implementing Green Business Models

When it comes to implementing green business models there is very little research available. An academic database search using various combinations and variations of key words such as ‘implementation’, ‘green business models’ and ‘circular economy’ only yielded a few results. One of the results was an article entitled “Developing and implementing circular economy business models in service-oriented technology companies” (Heyes et al., 2017). The article contains a single-case study of a micro-sized information and communication business, which has developed a circular economy-based business model, using the Backcasting and Eco-design for the Circular Economy framework (BECE-framework). The purpose of the BECE-framework is to help companies to develop a business model based on circular economy. The BECE-framework consists of 10 iterative steps, with implementation being the 10th. and final step. The focus of the BECE-framework is more holistic in regards to developing green business models, and thus the element of implementation does not make up a substantial part of the framework. Furthermore, the article does not include any of the 30+ theories and frameworks presented in Nilsen taxonomy of implementation science (Heyes et al., 2017). However, there has also been another study, which very much relates to the The EU Regional Fund-programme. The study is entitled: Implementation of Circular Economy Business Models by Small and Medium-Sized Enterprises (SMEs): Barriers and Enablers, and it seeks to uncover some of the most common barriers and enablers encountered by SME’s in transitioning to circular economy business models. The study identified “lack of support from their supply and demand network” and “lack of capital” to be the most common barriers encountered by the SME’s (Rizos et al., 2016). In regards to enablers, the study found that a green mindset in the companies as well as their networks, played a contributing role in transitioning to circular economy business models. The study also found the benefits of being perceived as green by the customers was an important enabler (Rizos et al., 2016). However, as described in Nilsen’s taxonomy of implementation science, barriers and enablers, only represent some of the aspects of implementation. As a result there is still much to uncover in regards to implementation of green business models.

2.6 Research question

Given the lack of knowledge and research on the subject of implementing green business models, this thesis will attempt to fill the gap by drawing on elements of implementation science and combining it with multiple-case studies of SME's and operators under Priority-axis 3 in the EU Regional Fond-programme.

This leads to the following research question and sub-questions:

Research question:

How can implementation science be used to understand and facilitate implementation of green business models in SME's in order to optimize their use of energy and resources?

Sub-questions:

1. What characterizes the process of implementing green business models in SME's?
2. What are the driving forces that encourages SME's to adopt a green business model?
3. What are the most common barriers and enablers of implementing green business models in SME's?
4. How does the context of the individual SME's affect the implementation of green business models?
5. How can SME's determine the environmental effects of implementing green business models?

2.7 Delimitation of the thesis

- The thesis uses three different implementation frameworks/theories, in order to delimit the extent of the thesis. There is likely to be other frameworks within implementation science that would also have been suited for the thesis.
- By only using three different implementation frameworks/theories, some aspects of implementation that may occur in other frameworks/theories will not be included.
- The SME's presented in the case study all represent best-case-scenarios in regards to adopting green business models according to their project operators, which will likely produce different findings than other SME's who have been less successful in adopting green business models.
- All cases in this thesis have been involved with the EU Regional Fond-programme, which is important to note in some of the findings of the thesis.

3.0 Applied Implementation Frameworks and Theories

As previously described there are many types of implementation frameworks and theories in the field of implementation science. In order to answer the research question, this thesis will include three implementation frameworks/theories to serve as the theoretical sparring for the analysis. The three frameworks/theories will be selected from different categories of Nilsen's taxonomy. The purpose of this is to make the analysis as nuanced as possible, and it is assumed that three frameworks/theories from different categories are more likely to do so than three frameworks/theories from the same category. Given that the research question is not directed towards a specific branch of implementation science, it is considered more relevant to consider different aspects of implementation rather than to focus on a single aspect. In Nilsen's implementation taxonomy there are five different categories of implementation theories and frameworks: Process models, Determinant frameworks, Classic theories, Implementation theories and Evaluating frameworks.

Process models

This category is characterized by focusing on the specific steps that are taken in the process of turning research into practice. The purpose of process models is to explain and/or guide these processes.

Determinant frameworks

The focus of determinant frameworks is to identify barriers and enablers that influence the outcomes of implementation. The overall purpose is to understand and/or explain the variables that affects the outcomes of implementation e.g. by predicting outcomes or interpreting outcomes retrospectively.

Classic theories

This category represents theories that have been used within the field of implementation science, in spite of their origins from other fields of science e.g. psychology, sociology and organizational theory.

Implementation theories

These theories are developed within the field of implementation. Implementation theories can either be developed from scratch or by adapting existing theories and concepts.

Evaluation frameworks

This category refers to theories that seeks to identify certain aspects of implementation, which can be evaluated to determine implementation success.

The three frameworks/theories selected for the thesis are: the Knowledge-to-Action framework (process model), the PARIHS-framework (determinant framework) and the Theory of Implementation Effectiveness (implementation theory), which will all be presented in the fol-

lowing sections. How the frameworks and theory are used in the analysis of the thesis will be explained in chapter 4: Methodology and Research Design.

The knowledge-to-action framework

The knowledge-to-action framework was developed in Canada in the 2000's as a response to the confusing multiplicity of the terms that were used to describe the process of transcending from knowledge to action (Graham et al., 2006). The purpose of the KTA framework was: "to address the need for conceptual clarity in the KTA field and to offer a framework to help elucidate what we believe to be the key elements of the KTA process" (Graham et al., 2006). The framework revolves around a model, which is made up of two components: knowledge creation and the action cycle (see Figure 4).

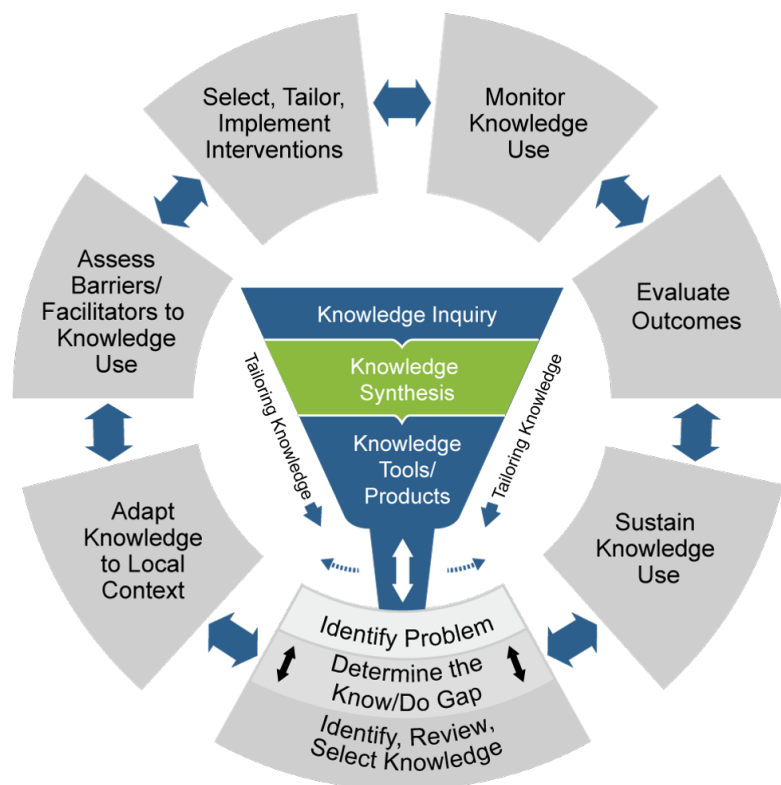


Figure 4: Model of the KTA-framework (Graham et al., 2006)

Both of the components consist of several phases which overlap. Furthermore, the phases can also be iterative, and the action phases can be carried out sequentially as well as simultaneously. The knowledge funnel represents knowledge creation, and is made up of all the major types of knowledge or research. As knowledge moves down the funnel it concise and thus more useful to stakeholders. The developers of the KTA-framework uses the following analogy to describe the funnel: "think of the research being sifted through filters at each phase so that, in the end, only the most valid and useful knowledge is left" (Graham et al., 2006). The phase of knowledge inquiry represents all the unmanageable information and primary studies that is "out there" with various levels of accessibility. This can be considered as unrefined knowledge (Graham et al., 2006).

Knowledge synthesis, also referred to as second generation knowledge, represents the aggregation of existing knowledge. In this phase, explicit and reproducible methods are applied to identify, appraise and synthesize studies and information relevant to specific questions. The purpose of this phase is to make sense of all the relevant knowledge (Graham et al., 2006).

The knowledge tools/products (third generation knowledge) represents the form which is used to present the knowledge to the relevant stakeholders. The knowledge should be presented in a clear and concise manner that meets the informational needs of the stakeholders (Graham et al., 2006).

The action cycle represents the process that leads to the application of knowledge i.e. implementation. The phases in this process can both influence each other as well as be influenced by the knowledge creation phases. The first part of the action cycle is usually an individual or a group who identifies a problem, which is addressed through the search for knowledge relevant to the problem. Once the relevant research has been identified, it is subjected to critical review in order to determine its validity and usefulness. Furthermore, an individual or a group may also determine if there is a knowledge-practice gap that needs to be addressed between the identified problem and the selected knowledge (Graham et al., 2006).

The next phase is about adapting the knowledge to the local context. This phase describes the process that individuals or groups go through as they make decisions regarding the value, usefulness, and appropriateness of the knowledge they will be using to their setting and circumstances. Although the process is not necessarily formal, it is still an important phase, given that generic knowledge is rarely applied directly without some form of adaptation to a given context (Graham et al., 2006).

The next step in the KTA framework is concerned with assessing barriers and facilitators that can influence the uptake of the knowledge to be adopted. Such barriers and enablers can be related to the adopted knowledge itself, but also to the potential adopters and the context and setting. In regards to implementation it is important to identify potential barriers in order to target them and thereby overcome the obstacles that they pose. The same applies to potential facilitators, which can be advantageous to the implementation (Graham et al., 2006).

The following phase can be considered to be the one that deals with the actual implementation in which knowledge is transferred into action. This phase is about planning and executing interventions that facilitate as well as promote implementation of the knowledge. Furthermore, the identified barriers must be addressed through selected and tailored interventions (Graham et al., 2006).

After the implementation interventions follows the monitoring phase. In this phase, the applied knowledge is monitored in order to determine if the desired change has been achieved. In case the desired change has not been achieved it is suggested to reassess the potential adopters in order to determine their interest in using the knowledge. This can help to determine whether the lack of change is a result in their lack of interest, or if it is related to barriers beyond their control or new barriers that have appeared after the initial introduction of the previous phase. The next phase is to determine the effects of using the knowledge. The purpose of this phase is to determine whether or not the application of the knowledge makes an actual difference. This is the only way to determine if the implementation was successful (Graham et al., 2006).

Finally, the last phase in the KTA framework deals with sustaining the use of knowledge. In this phase, old as well as new barriers must be addressed, monitoring the ongoing knowledge use must be sustained and the impact must be continuously evaluated. The purpose of this phase is to create a feedback loop that ripples through the action phases (Graham et al., 2006). It is important to note that the KTA framework is iterative and dynamic, and thus different phases can be affected by each other.

The PARIHS-framework

The PARIHS framework for Promoting Action on Research Implementation in Health Services (Rycroft-Malone, 2004). The purpose of the PARIHS framework is to provide a framework to turn research into practice. Although the framework was developed to be used within the sector of health care it has also been used in other contexts (Harvey & Kitson, 2016). The PARIHS framework focuses on the context in which implementation is taking place, and argues that successful implementation (SI) is a function of the dynamic between three factors: evidence (E), context (C) and facilitation (F) (see Figure 5).



Figure 5: Model of the components of the PARIHS-framework (Rycroft-Malone, 2004)

According to the PARIHS framework, in order for successful implementation of evidence: “there needs to be clarity about the nature of the evidence being used, the quality of context, and the type of facilitation needed to ensure a successful change process” (Rycroft-Malone, 2004). Each of the factors consists of several sub-elements that can be rated somewhere in the spectrum from low to high. If an element is rated high it increases the chances of successful implementation (Rycroft-Malone, 2004).

In regards to evidence, the PARIHS framework adopts a broad approach i.e. evidence is not just research, but also includes other sources of knowledge and information. However, the

framework also argues that the different sources of knowledge should have been subjected to testing and have been found credible (Rycroft-Malone, 2004).

The framework also argues that context can be considered to be an infinite factor meaning that implementation can take place in various settings, communities and cultures that are affected by different factors e.g. economic, historical, social etc. The overall contextual factors of the PA-RIHS framework are categorized in the sub-elements of culture, leadership and evaluation. Culture refers to the willingness to change within an organization. Leadership refers to how leaders have the ability either work for or against change in the organization. Finally, evaluation refers to measurements on which to base actions. Evaluating mechanisms increase the chances of successful implementation (Rycroft-Malone, 2004).

The final factor of the framework is facilitation, which refers to the process of enabling implementation of evidence into practice. A facilitator is an individual with the appropriate skills who carries out a specific role, in order to help individuals, teams and organizations in the process of applying evidence in practice (Rycroft-Malone, 2004).

The Theory of Implementation Effectiveness

In 1996 professor Katherine J. Klein and Joann Speer Sorra wrote the article: The Challenge of Innovation Implementation, in which they present a model (see Figure 6) designed to describe

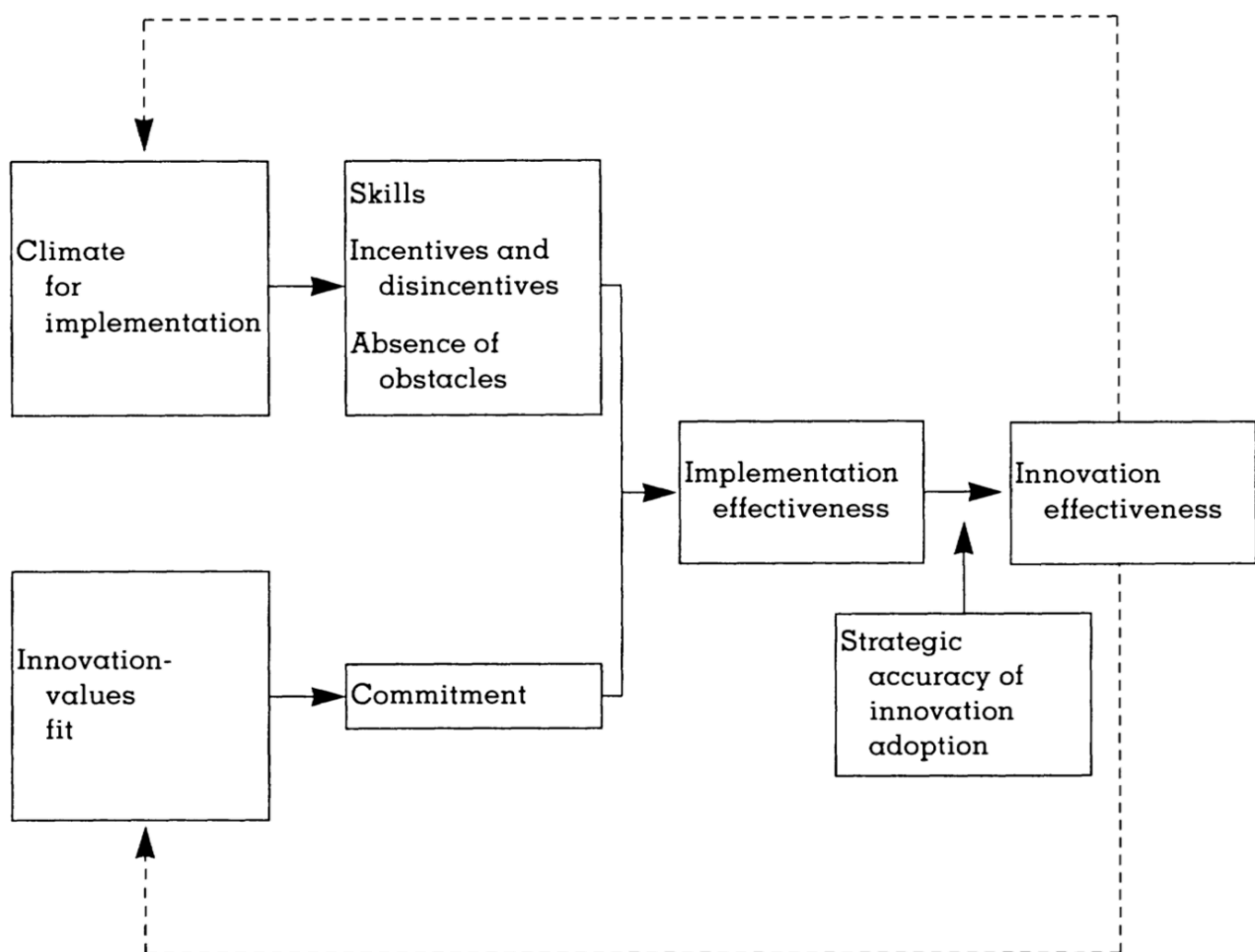


Figure 6: Model of determinants and consequences of implementation effectiveness (Klein & Sorra, 1996)

the “determinants of the effectiveness of organizational implementation” (Klein & Sorra, 1996).

According to the model the implementation effectiveness is a function of (a) the climate of the organization and (b) how well the innovation fits the values of the members in the organization. The concept of innovation in the model is described as “a technology or a practice being used for the first time by members of an organization, whether or not other organizations have used it previously” (Klein & Sorra, 1996), and innovation is described as “the transition period during which targeted organizational members ideally become increasingly skillful, consistent, and committed in their use of an innovation” (Klein & Sorra, 1996).

Climate for implementation refers to how the employees perceive their use of a given innovation in terms of how it is rewarded, supported, and expected in their organization. The more incentive the employees have for using an innovation the stronger the climate for implementation. However, it is necessary to distinguish between compliance and internalization. The employees must also have the necessary skills to use the innovation, and there should be no obstacles to prevent the use of the innovation. If an employee has a complaint regarding the use of an innovation it is up to the management to remove the obstacle in question. In regards to climate it is important to distinguish between compliance and internalization. Compliance refers to employees accepting an influence in order to avoid punishment or to gain specific rewards. Internalization, on the other hand, refers to the acceptance of an influence because it is congruent with the values of the employee. Employees who experience the latter are more likely to be committed and enthusiastic about the innovation (Klein & Sorra, 1996).

Innovation-values fit refers to “the extent to which targeted users perceive that use of the innovation will foster (or, conversely, inhibit) the fulfillment of their values” (Klein & Sorra, 1996). If a given innovation is in alignment with the values of the targeted users, the fit is good, if an innovation does not align with the values of the users, the fit is poor, which can lead to difficulty when making changes to an organization. Note, that the fit can also be considered to be neutral. In regards to values, the authors emphasizes that the model refers to shared values of an organization or a group. A poor fit to the values of an organization or a group is more likely to derail implementation as opposed to the values of a single member (Klein & Sorra, 1996).

A good climate for implementation and a good innovations-values fit is a good scenario for innovation implementation, with the employees being willing and able to use the innovation. If the innovation-value fit is good, with a weak climate for implementation, the targeted users are committed, but lack the skill, incentives and too many obstacles will likely result in sporadic and inadequate use of the innovation. A reverse scenario with a poor fit and a good climate for implementation will lead to employees opposing the innovation or perhaps even leaving the organization. If the employees are unable to leave, they are likely to engage in compliant innovation use, at the most. When both climate as well as fit is poor, the targeted users are likely to experience a sense of relief, when facing little pressure to use the innovation. If the targeted users are unskilled, unmotivated and against using the innovation, it is likely not to be used at all (Klein & Sorra, 1996).

When the implementation of a given innovation is effective, there are two possible scenarios; either the innovation use enhances the performance of the organization or it does not. If the

innovation use enhances the performance, the support from managers and supervisors towards innovation implementation will increase, thus strengthening the implementation climate, which may likely lead to improvements in regards to implementation practices. Such improvements could entail praise for targeted employees or further innovation training of more employees etc. Also, if the innovation fits with the values of the employees, these values are likely to be strengthened further. However, if the innovation use does not enhance the performance of the organization, it is likely to have the opposite effect. Managers and supervisors will have less support for innovation implementation, and the implementation climate will decline. It may also result in poor innovation-values being strengthened e.g. “We should have known this would not work for us” (Klein & Sorra, 1996).

When implementation is not effective, the implementation climate has likely been weak and the failure will increase the weakness, unless the management make drastic changes in the implementation climate by increasing their support through changes to policies and practices in order to strengthen the support for the innovation implementation. If the innovation does not fit the values of members of the organization they may feel a sense of empowerment due to their obstruction of the innovation’s implementation. Furthermore, if the groups of the organization are divided in regards to value-fit, the influence of the employees who advocated the innovation implementation will experience a reduction in their influence (Klein & Sorra, 1996).

4.0 Methodology and Research Design

This chapter contains the methodology and research design of the thesis, which serves to clarify the linkages between the research question (and the subquestions), the collection and analysis of data and the final conclusion of the thesis. The first section of this chapter presents the cases included in the thesis, followed by an introduction of the respondents. Then follows a section describing how the interviews for the case study was conducted. Afterwards comes the research design of the thesis which includes a model designed to create an overview of the linkages between the different elements of the thesis i.e. interviews, frameworks, theory and sub-questions. The final part of this chapter contains a reflection on theory of science, explaining how the thesis perceives reality and how to generate knowledge to it.

4.1 Selecting the cases

The analysis of this thesis will be based on a multiple case design. The multiple case design has been selected based on the following reasons: 1) The research question of the thesis does not meet the typical criteria of choosing a single case study i.e. unusual, critical, extreme and revelatory cases (Yin, 2014). 2) Multiple case studies often present stronger conclusions (Yin, 2014). When designing a case study it is necessary to establish a set of criteria for selecting the case(s) (Yin, 2014). In order to answer the research question, this thesis includes interviews with three operators of three different projects under Priority-Axis 3 in the EU Regional Fund-programme. Some projects are still operating, however the operators included in this thesis have all finished their projects. The purpose of selecting operators from finished project, was that they were able to answer based on experiences from an entire concluded project. The thesis also includes interviews with respondents from three different SME's, all of which have been associated with one of the projects of the included operators (see Figure 7).



Figure 7: Overview of relation between operators and SME's under Priority-axis 3 in the EU Regional Fund-programme.

All three SME's have been selected, as the operators estimated them to be one of the most successful participants of their projects in regards to implement green business models.

4.2 Introducing the respondents

This section introduces the respondents who have been a part of the case study of this thesis.

Frank Engelbrecht & Mads Røge

Frank was the operator of Focused Value Chain Collaboration, which was a project that focused developing green business models in SME's by improving the value chains of the SME's through partnerships with other SME's. Mads Røge works as logistics manager of Komproment, which is a production company that makes facades for buildings. Today, most of Komproment's product line is Cradle to Cradle certified.

Thomas Nielsen & Hanne Zinck

Thomas was the operator of Waste to Resource, which was a project that focused on helping SME's to optimize their use of resources and helping some of those SME's to develop a green business model. Hanne Zinck is the Director of Scandinavian Packaging, which is a company that makes plastic packaging solutions. In their joining of Waste to Resource, they greatly improved on their resource flows and energy consumption.

Anne-Sofie Hattesen & Peter Feddersen

Anne-Sofie was not the official operator of Sustainable Bottom Lines, though she did work on the project along with the operator. The focus of Sustainable Bottom Lines was to develop green business models that were easy for the SME's to implement. Peter Feddersen is the director of Schæffergården, which is a hotel and conference center, that joined Sustainable Bottom Lines. In their joining of the project, they changed several aspects of their business, and today they are certified according to Svanemærket.

Stefan Brendstrup - Learning consultant

Other than interviewing the operators and the SME's, an interview with learning consultant, Stefan Brendstrup, was also conducted. Stefan has worked with many different SME's in order to evaluate their outcomes by joining projects under Priority-axis 3 in the EU Regional Fund-programme.

4.3 Conducting the interviews

All of the interviews of the thesis have been conducted as semi-structured interviews. The benefit of using this form of interviews is that one has the option of pursuing relevant aspects that may occur during the interviews. Furthermore, it also provides the opportunity to further elaborate on the answers given by the respondents. The operators have all been interviewed based on the same questions, and so have the respondents of the SME's. However, the interviews do not follow the exact same structure in regards to questions, due to semi-structured approach. However, during the interviews it was attempted to have the operators cover the same aspects of implementing green business models to the extent possible, and the same applies to the respondents of the SME's as well as the interview with learning consultant Stefan Brendstrup. The purpose of having the respondents answering many of the same questions, was to

uncover various aspects of implementation as presented in the frameworks and theory in chapter 3. Note, some of the interviews have been conducted in person, whereas others have been conducted over the phone.

Following the interviews each of the respondents have been sent a transcribed version of their interviews, in order to make sure that they did not feel misunderstood or misquoted. Each of the respondents have approved the transcripts of their interviews.

4.4 The research design

The research design of this thesis follows the structure of the model illustrated in Figure 8.

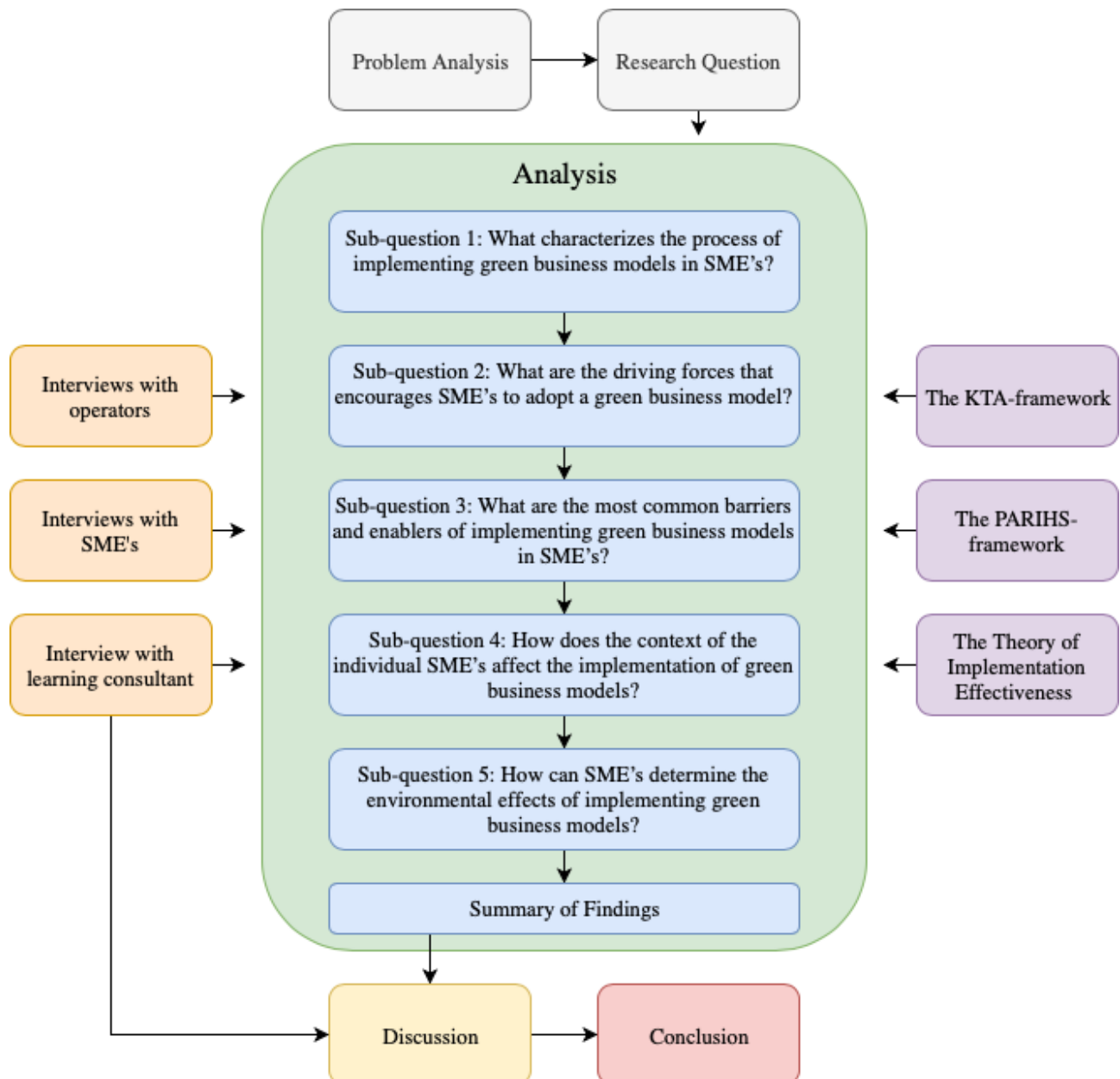


Figure 8: Model of the thesis research design.

The analysis of the thesis follows the chronological structure of the five sub-questions to the research question. Each of the sub-questions is answered by drawing on the interviews with operators, SME's and the learning consultant, and comparing the findings of the interviews to

the different implementational aspects of the frameworks and theory. Note, that not all of the sub-questions will include aspects from each of the implementation frameworks and theory, as the individual framework or theory does not necessarily cover the aspects of the individual sub-questions. For example, sub-question 5 focuses on determining environmental effects of the green business models. However, in this case, only the KTA-framework includes aspects of implementation that focuses on monitoring and evaluating. The final part of the analysis contains a summary of findings, which seeks to present a short summary of what was uncovered in each of the sub-questions. Following the analysis is the discussion of the thesis, which includes a critical reflection on some of the findings by drawing on a series of important factors to implementing green business models in SME's that were uncovered in the interview with the learning consultant. After the discussion comes the conclusion of the thesis, in which the research question is answered.

4.5 Theory of science

What is real and how do we figure out what is real? Those are the essential questions in theory of science, and depending on the approach, the answers will be very different. This section describes the chosen theory of science for the thesis as well as why it was chosen.

This thesis adopts a perspective of critical realism. Critical realism was developed by British Philosopher Roy Bhaskar, in the 70's, and further elaborated upon in the 80's and 90's. As the name suggests critical realism is a realistic theory of science i.e. there is a reality regardless of what we may think of it, and thus there are two dimensions to critical realism. On the one hand we have the transitive dimension, which contains our knowledge of the world. On the other hand we have the intransitive dimension, which refers to the world as it actually is, regardless of our knowledge of it. The transitive dimension consists of all the knowledge e.g. theories, models, concepts, data etc., that exists at a given time. In critical realism, the epistemology relates to the transitive dimension. Ontology on the other hand relates to the intransitive dimension, which consists of objects that science seeks to generate knowledge from, e.g. atoms, international relations etc. In critical realism these objects exist regardless of what mankind believes to know about them, and they do not change even though our scientific understanding of them do e.g. the discovery of the Earth being round did not mean that the Earth was ever flat (Juul & Pedersen, 2012).

Critical realism separates itself from approaches like positivism by insisting that reality is deep. This is explained through three domains: the empirical domain, the actual domain and the deep domain. The empirical domain consists of our experiences and observations. The actual domain consists of all existing phenomena and events taking place, regardless of them being experienced or not. These two domains are what make up the world view of empirical realism, which describes the world in regards to what can be observed. However, critical realism also includes the deep domain, which consists of structures and mechanisms that cannot be observed, and in certain circumstances they can cause events and phenomena to occur in the actual domain (see Figure 9) (Juul & Pedersen, 2012).

In critical realism reality consists of complex objects, whose structures provide them with the capacity to act in a certain way, which is described as causal potential. Causal potentials depends on the object e.g. water has the potential put out fire or make plants grow whereas humans

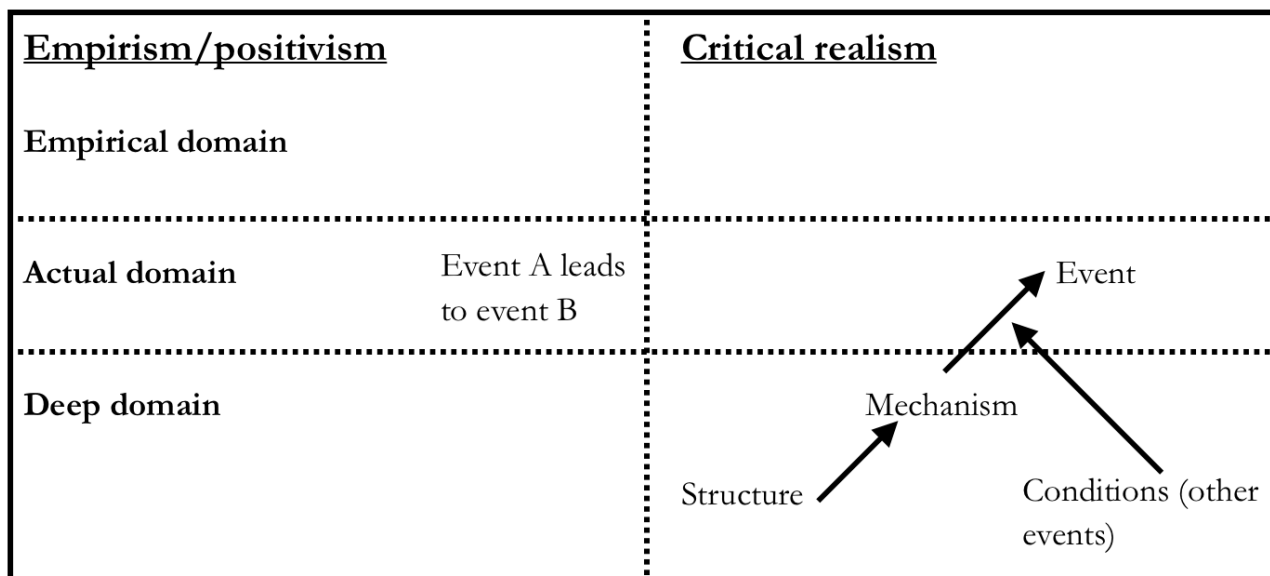


Figure 9: The three domains of critical realism (Juul & Pedersen, 2012).

have potential for working or driving a car etc. However, just because an object has a causal potential does not mean that it will be released and thus causing an event. This depends on the conditions of the specific context, which leads to the concept of mechanisms. In the deep domain, a mechanism represents a force that can cause certain events. However, a given mechanisms can be affected by other events as well as other mechanisms. In the deep domain there is a large amount of mechanisms, which can trigger, block and modify each other as well as the consequences of each other. In short, the relation between mechanisms and causal potentials is possible without being predetermined (Juul & Pedersen, 2012).

The ontology of critical realism is reflected in its epistemology. If reality consists of open systems, which includes a multitude of structures and mechanisms, it is impossible to accurately predict the future. According to critical realism the overall purpose of science is to try and gather knowledge about structures and mechanisms by gathering knowledge from events at the actual domain. It is important to note that critical realism distinguishes between natural science and social science. Whereas social sciences deals with events of open systems, the natural sciences can operate in closed systems e.g. lab studies, which makes it less susceptible to external influence. Critical realism views knowledge as a social product that has been generated and modified by humans throughout history. The fact that old theories and explanations are replaced by new ones over time, proves that knowledge is fallible. Critical realists can be described as ontological realists and epistemological relativists. They are ontological realists in the sense, that they insist that reality, social as well as natural, exists regardless of what we may think we know. They are epistemological relativists in the sense that they realize that knowledge is socially constructed and thus temporary (Juul & Pedersen, 2012).

Why critical realism?

If we look at the environmental issues, like climate change, we are facing, there are different approaches depending on the theory of science. For example, in positivism only observations and empirical connections are real, and in radical constructivism power and discourse are of-

ten considered much more important than the reality referred to by science. However, in critical realism, it is believed that our observations can deviate from the deep connections of reality. This explains how there can be a tendency to global warming in spite of local and temporary cases of lower temperatures. Furthermore, critical realism also argues, that reality is separated, and more important, than science. Science can be fallible, and it can be affected by power, money, paradigms and other factors. However, this has nothing to do with reality. Mistakes by researchers as well as influences of power does not affect climate changes. In critical realism there is a recognition of the strong evidence from the scientific field of climate changes, that emissions of CO₂ is causing the temperature of the world to rise. We may not have complete and perfect knowledge on climate change, but the evidence is sufficiently strong to suggest that the climate crisis is real and we must act accordingly (Juul & Pedersen, 2012).

Critical realism was chosen for this thesis based on its natural compliance with environmental issues and global warming, which are the driving issues of the thesis in the first place. Environmental issues and global warming are complex phenomena, that occur in an open system with endless variables, and with humans representing a very significant variable. According to the scientific community there is no doubt, that human activity have great effects on our environment and the climate (UNEP, 2019). Although discourses and power relationships are important aspects on how we deal with environmental issues and climate change, they do not change the fact that they are happening.

In regards to the research question and the findings of this thesis, critical realism will argue that a reduction in emissions are an essential aspect of mitigating climate changes (Juul & Pedersen, 2012) and environmental issues. Given that circular economy holds significant potential in reducing emissions (Deloitte, 2016), green business models may well represent a significant part in the action against climate change. However, given that green business models take place in an open system there are many mechanisms and structures at play, and thus what is true in one case may not be true in another. Never the less, the purpose of the thesis is to get as close to the truth as possible.

5.0 Analysis

This chapter represents the analysis of the thesis, which will serve as the foundation for answering the research question. The chapter is divided into six sub-sections, of which the first five addresses the sub-questions of the research question chronologically. Each of the sub-sections will include extracts of the interviews with companies, operators and the learning-consultant. The extracts of the interviews will be analyzed in regards to different aspects of the three implementation theory and frameworks presented in chapter 3. The sixth and final sub-section of the chapter contains a summary of the findings, which will be further processed in the discussion before the final conclusion.

5.1 Understanding the process

Among the applied frameworks and theory of this thesis, the KTA-framework is the only one, that describes implementation as a process, that takes place through a series of steps. Although the KTA-framework is illustrated through a circular model with iterative phases, there is still a degree of linearity to it. This section seeks to understand the process of developing and implementing a green business model in SME's in order to uncover general as well as more isolated tendencies. However, there is a selection-bias, given that all of the SME's in this thesis have been part of various projects under the same programme.

Frank: The first part is preparing the team, where you recruit and communicate, to get the companies to sign up for it. In Focused Value Chain Collaboration, they just had to say yes, and we would then screen them, and then we evaluated the screened companies. We have since changed that to an actual application, so that we have some data and knowledge about the company before doing the screening. Because some of them drop out already at that point. [...] So the initial steps to selecting the right companies, and then selecting consultants, is a phase in itself - just assembling the team. And then you are sort of rolling, we held a kick-off day, and in the beginning we made a big deal out of sharing knowledge in a form of teaching setup, explaining what circular economy is or what the potentials are for you. [...] The next phase is the resource-profile, which is the mapping of the company on various parameters, and the roadmap with sub-strategies, saying where do you want to be in 10 years, and what do you have to do to get there. [...] In the next phase you begin to develop your business model. [...] Once the business model has been developed, or several of the possible paths have been uncovered, and they decide which one to take. We used to base this on business model canvas, but that was a bit difficult to translate, so we developed a more rigid template that would describe the business model that included the implementation and the future progress. And then the consulting is completed by a business case they develop and present.

In Focused Value Chain Collaboration the first part of the process in developing green business models was to find the companies to be a part of the project. Once the companies had been found they would be subjected to a screening to identify the potential of the individual

SME's. Once the SME's and consultants had been selected they held a kick-off day, which was followed by a process of developing the resource-profile along with a roadmap. Then followed the development of the green business models, and the consultants would then develop a business case, which they would present to the companies, which is the end of the operators involvement with the SME's. The projects of Sustainable Bottom Lines and Waste to Resource followed a similar process.

Anne-Sofie: The municipalities were in charge of recruiting the companies, and they are the ones who support the process, where they begin by offering a screening to the companies in order to determine the potentials for the individual companies to work on. Afterwards you locate the potential that the companies want to work on, and then you develop a description of the assignment for consultants to work on. Then follows a report, that should take point of departure in the need of the company, and rather than just looking on potentials, we also look at implementation, because it should not just end up being a report for the drawer. We need to ensure that they are interested in working with it further.

Thomas: Together with the six municipalities and DTU we developed the screening tool, and every municipality had to figure out which companies in their districts made sense to pay a visit. And then we contacted them. We were a part of almost all the screenings. Then we generated a screening-report based on the data, which we sent to the companies. Then we met and decided on who to offer a technical development plan and who to offer a green business model. Once they were assigned we informed the companies, and then the plans had to be put in a call for tenders, and we developed a standard material which had to be filled out. Initially the idea was for the companies to do it themselves, but that moved very slowly, so we helped them with it. But it is important to note that it was up to the companies who the material should be sent to. So we had a talk with the companies on which consultants they would like to bid on the offers, and then we sent it out on behalf of the companies, if they did not do it themselves. Then they would receive two or three offers, at least two according to the rules, and then they selected the offer with the best fit, because the price was already set. Then we had an initial meeting with the consultants, where we discussed how they would solve the assignment, and also so the consultant physically could meet with the company. That was important, so they could relate to what they were going to look into. Then they developed the plans. Initially they were just sent out to the companies, but later on we made it a requirement that they had to have a meeting with the company and run through the plan. It was actually one of the more ambitious consultants who initiated it, by wanting to have a meeting and go over the report, and quality test it, and perhaps make some later adjustments. And therefore we made it a requirement, because it is just completely different from receiving a report that lies in a mailbox. So the handover was very beneficial.

The three projects all followed a similar process due to them being part of the same programme. None of the projects worked on the actual implementation phase, as this was not a part of the projects. In regards to the terminology of KTA-framework the projects covered the phases of, identifying the problem, adapting the knowledge to the local context and assessing barriers and facilitators. The identifying of the problem is represented in the screening phase, where the operators determine if there is potential for developing a green business model in the individual SME. Adapting the knowledge to local context is represented by the phase where the consultants (and operators) work with the companies to develop resource-profiles, roadmaps and green business models, that are relevant to the individual SME's as described in the previous statements.

The phase of developing the green business models with the SME's also includes aspects of assessing barriers and facilitators. All of the operators have described how time and resources represented significant barriers to the SME's, and how they each had to account for this in working with the SME's. The aspects of barriers and enablers will be elaborated further in section 5.3 Identifying common barriers and enablers.

Once the consultants finished their work, the SME's were handed some form of report covering their potentials and how they could achieve them. Although the operators were not a part of the implementation it was still important to them, that the final reports appealed to implementation in the SME's as exemplified in the following statements.

Frank: The business model should definitely be so clear, that you commit right away.

Anne-Sofie: Then follows a report, that should take point of departure in the need of the company, and rather than just looking on potentials, we also look at implementation, because it should not just end up being a report for the drawer. We need to ensure that they are interested in working with it further.

Thomas: Our consideration was that we would do everything in our power during the project, to remove all the uncertainties for the companies in order to go on implementing. Because our involvement ended with the plan. So we wanted to do as much as possible in order to provide the companies with a solid foundation for moving on with the plan. So if there was a good business model they would simply not be able to afford not doing it. So we spent a lot of time quality checking the plans from the consultants, we spent a lot of time on getting the right content and quality.

Once the SME's had been handed their reports, their involvement with the projects ended, and thus it is relevant to examine how the companies acted once their involvement with the projects was over.

Mads: We just began to work with it slowly. It is not like we went out to our organization and said this is what we do now. We presented it to them, that we were going to be Cradle to Cradle on certain products. We need to start picking up our

trash. We have always said that we were picking up 100 DKK bills. We try to eliminate our food waste. We do not buy food on Fridays because we use leftovers. All of those little things starts to grow quite fast. If you work with the culture in a company it does not work to dictate how your employees act. It has to be allowed to grow. We are going in this direction. Next step is so and so, and it is anchored with those who are personally invested in the company. So every year we set aside some capital if it makes sense. For example now we are being re-certified which costs a certain amount. So we make sure to inform people of what is going on, and then we manage through common sense. We manage through our business model which everybody knows is what we are aiming at. We are very fortunate to be a small business. Without sounding like too much of a hippie, we do have a very recognizing style in Komproment, meaning that we delegate a lot of responsibility to our employees. If we manage through common sense then people will make the right decisions. And that is why it has grown in our organization. We set out some guidelines, and then people pick it up.

Peter: First of all we involve those employees and department managers who are affected, given that they are the ones that have to pull the project through, and they are the ones who can ask the right questions. We were sort of delivered from Sustainable Bottom Lines to the right people who had to install the machinery, and the people who had to approve our certification. But they were still encouraging us to ask if we had any doubts. It was a very nice and smooth process. [...] It is a very natural part of our business, to involve people early on, regardless of we had to implement a new breakfast buffet or four new rooms or whatever. We know that we cannot do anything on our own. We need the experts in-house to get involved early in order to ensure that the project starts on the right foot, and that we reach our goals. We need them. A hotel is very specialized, so for example our real-estate manager knows everything about the house down to the last faucet. So he has to be involved early on if we begin to discuss energy initiatives in our systems. The same goes for the kitchen manager who has to be involved early when we discuss transitioning to organic foods. Chemistry has also been an important part of being Svane marked certified, so we have spent a lot of time with the housekeeping manager, because none of us could know how that was put together in terms of which products you use for what.

Hanne: We have an environmental-team, and I immediately sent the report to them, and we had a meeting the following day, but before we even had the meeting the technical manager had already moved on some of the things, because we were baffled by how much we could save. We used to think that we will deal with this when there is time in six months, so this was really an eye-opener. It is low-hanging fruits, and we are not going to wait to act, we do that now. So the setup of the report with the payback on the front page was very good. The fact that I still remember it after a lot of other reports just goes to show that it worked.

In regards to implementation, all of the companies acted on the reports they had been handed by the consultants and operators, which in the KTA-framework would fall under the implementation phase. The following phases of the KTA-framework are monitoring, evaluating and sustaining knowledge use. However, based on the interviews with the companies as well as the operators these phases are only a part of the green business models at a very basic level, which will be elaborated further in section 5.5 Documenting the difference. Although the companies and projects are quite different, the processes of developing and implementing the green business models are rather similar as illustrated in Figure 10. However, as previously stated there is a strong selection-bias, given that the companies and projects have all operated under the same EU-programme.

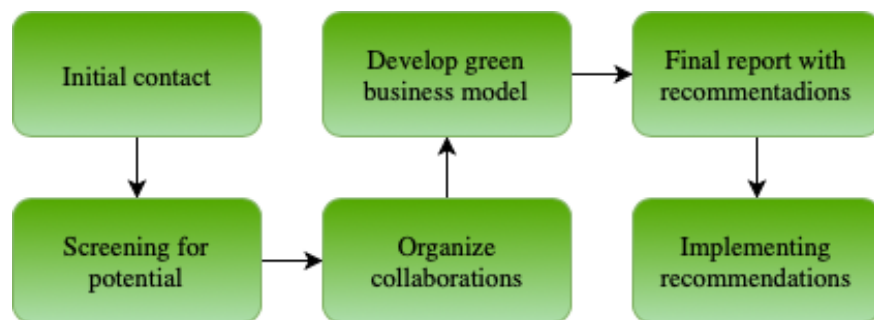


Figure 10: Common phases in the process of developing and implementing green business models in SME's

5.2 Driving forces of green business models

In this section we examine what motivates SME's to develop a green business model. This includes considering moral aspects as well as more practical circumstances. In regards to the implementation theory and frameworks, there is no explicit mentioning of what motivates implementation. However, given that motivation precedes action it makes for a relevant aspect to consider. When it comes to transitioning to a green business model there is a degree of skepticism involved with some of the companies, as explained by Mads from Komproment and Peter from Schæffergården. Hanne from Scandinavia Packaging on the other hand had no reservations.

Hanne: We are a very open company, so we did not think do we have time for this, because there were a lot of money to be saved, so we just wanted to get started.

Mads: Well actually, the company as a whole did not want to be involved at first. [...] Well, one of the owners is the one who is in charge of the economy in Komproment, and he was probably the biggest opposer, because he did not see any good business in this. [...] We considered whether or not it was a waste of time.

Peter: We were not entirely convinced that this was a good idea, but it seemed without risk. [...] No matter what, there is an economic perspective, and we have to operate a business. So that is definitely a part of it. At the end of the day we need to

make enough money to pay our employees, and make sure our house is in order. [...] Well, our first thought was that this is not healthy a healthy way to operate.

Based on the quotes it is clear that some of the companies have certain reservations about transcending to a green business model, which raises the question as to what made them change their minds?

Mads: The fact that the project was palpable and that we could get help to cover expenses, and that we could get a product that we could keep working on was what made sense. So we quickly ended up saying yes. [...] We just thought, what the hell, it is not going to cost us anything.

Peter: Well, the first project was installing a bio-shredder in our kitchen to handle our food-waste. That was when I realized, when we did the numbers, how much it makes sense to be a part of this project. I think that made us go all in and uncover everything that we could.

The replies demonstrate how there is a lot of economic concerns, when changing to a green business model, including the initial costs of launching a project as well as the potential profits. However, the opportunity to be helped along in the process is also an important factor to the companies when transitioning to a green business model, as exemplified in the following statements.

Mads: It was a process where we were well taken care of in a professional way. It was a damn good process. [...] We were stimulated through Annette (consultant from Cradle to Cradle). Before we met her we did not have any idea, that this was sensible. It was because she kept challenging us to do something that was better and we could begin to aim for certain things.

Peter: We were sort of delivered from Sustainable Bottom Lines to the right people who had to install the machinery, and the people who had to approve our certification. But they were still encouraging us to ask if we had any doubts. It was a very nice and smooth process. [...] We got some help in uncovering our potentials and prioritizing our efforts, which we would probably not have done if we had not received the help and sparring that we got through Sustainable Bottom Lines.

Hanne: We received some great help in being helped through the project. If it had been bureaucratic with having to fill out here and so on, we never would have gotten through with it. So there were project managers throughout the project, who kept track and were passionate, and who also found it interesting in uncovering potentials.

In terms of the moral aspects, the respondents agree that business comes first, but if good business can be combined with environmental efforts, it is even better, as exemplified in the following statements.

Mads: People think that it is fun to work on something that makes sense. People are proud of working with something that is up to standards. [...] We want to do something good, but we have to make some money.

Peter: On the bottom line the project was the higher purpose, we want to do something good for the environment. We want to reduce our emissions, and we want to tell our guests that we have made the extra effort. That has been the argument throughout the process. It gives us a sense of credibility both outwards and inwards.

Hanne: As a business-owner I believe in two things. Other than making money, when you own a business you have a responsibility towards the environment and you have a responsibility to the mental working environment.

The three companies all wanted to do something good for the environment, as long as it could be done whilst maintaining a healthy business. According to the operators the companies had very different motives for wanting to develop a green business model.

Anne-Sofie: It was very different depending on the approaches from the various companies. Obviously not all the companies are in the same place, and some are very passionate about sustainability and considers it to a natural thing to join such a project and they view the opportunity for consulting support as a good foundation for moving forward. For some of the companies it is difficult to do it by themselves, and so they need sparing. There are also those who are thinking in brand new ways in regards to green business development, and they find it interesting to look into. There is also a group views it as a strategy to get ahead on the market by seeing the competitive advantages in offering a greener product or being certified or being optimized in other processes, so that they can show outwards that they are working with sustainability and green transition.

Thomas: There are two aspects. There are those who want to save money, and then there are the ones who want to have a green profile. And you can say those two go hand in hand. Most SME's do not launch initiatives unless there is a sensible payback. Most companies want to have a green profile they can use in their marketing, while it also makes sense in terms of economy and competition, which makes them even stronger on the market.

Frank: Overall it was what is in it for me? What do I get from it as a company? How can it improve my business and our business identity, because that is also an important aspect. So that was the overall focus of the companies, which they still have.

Based on the interviews with the companies and the operators there are several different motives for wanting to develop a green business model. All of the companies in this case, wanted to do something good for the environment as long as it did not weaken their business. According to the operators other companies were more concerned with the competitive advantages and the potential to further their business. When looking at the implementation theory and frameworks, there is no direct mention of motivation and driving forces, in regards to initiating implementation. However, the KTA-framework does include some aspects of it. The first part of the action cycle in the KTA-framework revolves around identifying a problem. Depending on the definition of “problem” this phase could represent a company not being satisfied with their current business model, and thus wanting to adopt a green business model. This was the case for both Mads, Peter and Hanne all who wanted their companies to become more considerate to the environment. Neither the PARIHS-framework, nor the implementation-climate theory can be used to describe driving forces for implementation, given that they are directed towards implementation at later stages.

5.3 Identifying common barriers and enablers

Both of the implementation frameworks and the implementation theory used in this thesis, include some aspect of barriers and enablers. Although the terminology does vary, it still highlights the need for paying attention to these factors. The KTA-framework, the PARIHS-framework and the Implementation effectiveness-theory all includes barriers and enablers in some form, which often depends on the context of the organization. However, before looking into the contextual barriers and enablers, this section will seek to identify the most common barriers and enablers of implementing green business models.

Frank: The difficulty of getting an overview of your own value chain, and influence thereof. Is there a supplier that you have to coach and get into the mindset, or do you have to switch suppliers. I think time is also a classic factor, and getting enough time and focus from the companies to get involved. The faster and better you can get it through your organization, the easier you can break down the barriers that may exist.

Thomas: Well one of them was that the companies were too busy to participate, and they did not have the resources to dedicate someone to work with it, even though they only had to spend a limited time compared to what they stood to gain. That has been the biggest challenge.

Anne-Sofie: It was probably time, at the SME's. In order to map-out resources in particular, like a flow of resources, it requires a lot from the company in finding the data. And that was a challenge to some companies to find the data to the project and the consultants. It was a bit of a barrier. Not one that we could not forego, but it was a challenge.

Time and knowledge were the most common barriers according to the operators. The companies had difficulty in freeing up the time to join the projects, and they also had difficulty in getting an overview of their own data and value-chains. According to the companies, time and knowledge was indeed a barrier, but they also agreed that economic resources represented a significant barrier.

Mads: Time is always a factor. And maybe that is because we are a small company. Perhaps larger companies have more resources that they can devote to it. We could have used more hours, or someone who knew a lot about it. That would have been great, and it would have freed up some resources. Our challenge was that the person responsible for acting on this was also responsible for getting the products out to the costumers. It was a reallocation of resources, but that is just how it is in a smaller company, regardless of what we are doing. [...] One of the owners is the one who is in charge of the economy in Komproment, and he was probably the biggest opposer, because he did not see any good business in this. So we started by looking into what are the expenses of being Cradle to Cradle certified, and then we looked into what are the initial investments when we deduct the money we have been given to develop our business model, and what will it cost us if it turns out to be a huge failure.

Peter: Well, the shift to an organic kitchen, we were definitely concerned whether or not we could limit our expenses. No matter what, there is an economic perspective, and we have to operate a business. So that is definitely a part of it. At the end of the day we need to make enough money to pay our employees, and make sure our house is in order. So economy is a factor when shifting to organic food or becoming Svanemærket certified, we need to look at the investments and if our operation is impaired because we need to use a certain type of cleanser or whatnot.

Hanne: Well that was getting the liquidity because it was not free. So getting the finances to get things moving.

Based on the responses from companies and operators, it is clear, that time, knowledge and economic resources represent some of the most common barriers. The following statements represent the most important enablers encountered by the three operators and the three companies.

Anne-Sofie: Close collaboration with the companies, and meeting them where they are. And to always follow their process, and contribute where you can. Many of them do not know a lot about the field so there is a lot of knowledge sharing. It was also good to keep encouraging the companies to participate and be active, because they feel like a part of something.

Thomas: Well the most important aspect is that there is a good foundation for making a decision. And there can be a lot of aspects that causes the companies to do it or not. It could be the liquidity for example. So in the end it is important to have a good foundation for making a decision, and provide them with an overview on where to act and invest. When you talk to the SME's most of them have an idea of where to look, but they do not know where to begin and they do not know which solutions are most profitable. So the overview of where to begin and knowing the payback is important.

Frank: To develop the organization and help it grow, and to create a new joint project in some organizations, where various departments have to begin working together or two partners with different attitudes who achieve the good compromise towards the good goals.

The operators have different opinions on which elements were the most important in making their projects succeed with the SME's. However, all of the companies agree that the help and guidance they received by joining the projects, was an important enabler to them.

Peter: It is a new field, and where do you begin with a company like ours. And especially in uncovering the costs of switching to organic foods and so on. It would require some physical changes to our company if we should invest in a new heating system in order to be as sustainable as our customers would like us to. So we got some help in uncovering our potentials and prioritizing our efforts, which we would probably not have done if we had not received the help and sparring that we got through Sustainable Bottom Lines.

Mads: We got a bag of money for consultants, and we had to put in some hours, and we could end up with a very clear concept for a business model. So the fact that the project was palpable and that we could get help to cover expenses, and that we could get a product that we could keep working on was what made sense.

Hanne: We received some great help in being helped through the project. If it had been bureaucratic with having to fill out here and so on, we never would have gotten through with it. So there were project managers throughout the project, who kept track and were passionate, and who also found it interesting in uncovering potentials. The people from Waste to Resource were also passionate and helpful in finding consultants. So we contacted them and got some offers, which we based our decisions on. And also on where could we feel the passion and who had the qualifications. So we were definitely well taken care of through the process. If that had not been there I will honestly say that we would have gotten this much benefit from it, and perhaps we would not have reached our goals at all. So we have benefited tremendously from the project.

All of the companies agree that in joining the projects of developing a green business model has helped them in overcoming barriers. Thus, the projects themselves represent very important enablers. Furthermore, what makes the projects important enablers, according to the companies, was that they contributed in overcoming the most common barriers: time, knowledge and economic resources.

5.4 The role of context

So far, the most common barriers and enablers of implementation have been identified. However, the KTA-framework, the PARIHS-framework and the Theory of Implementation Effectiveness all argue that implementation is highly dependent on various contextual factors, though the terminology does vary. The KTA-framework is very vague in its description of context. On the other hand the Implementation-Effectiveness Theory only includes two contextual aspects: implementation climate and value-fit. Context is a very generic term, as described in the PARIHS-framework, which presents context as an infinite factor i.e. implementation can take place in various settings, communities and cultures that are affected by different factors e.g. economic, historical, social etc. Given that contextual factors are potentially infinite, this section will focus on three contextual aspects and how they affect the implementation of green business models in SME's. The three contextual aspects to be covered in this section are management, employees and the culture of the organizations with specific focus on willingness to change. The first contextual aspect to be covered is management.

Stefan: It is essential. If it (management) is not there nothing will happen. They have to be driving it, and represent the strategic focus. [...] Companies where it is not anchored in management will not be allowed to join the projects.

In the cases of Schæffergården and Scandinavian Packaging the desire to develop a green business model came from the directors of the companies. However, in the case of Komproment, it was Logistic Manager Mads Røge, who wanted the company to adopt a green business model.

Mads: The company as a whole did not want to be involved at first. It was a modeling process that began when we were introduced to the project and approved to the project. And that is how it began to look into how we could work with it. There are three owners in Komproment and myself who are part of the management group. And the group was sort of split in two, or perhaps even three, in regards to who thought it was a good idea and who did not.

During the interview with Mads he made it clear, that the three owners of Komproment were the ones, who were financially invested in the company, which meant that they had the final say on whether or not to implement a green business model. Mads managed to convince the owners by appealing to their individual professional backgrounds, and today they all support the green business model.

Mads: Our owners are made up of a salesman, a technician and an economist. So they have three very different ways of looking at it. And there is no doubt that they evaluate it differently. But today it is an important part of our business. The owners no longer question that this is the direction we are heading in.

There is little doubt that support from management is an important aspect of implementing green business models. In all three companies the management was either motivated themselves, or they were convinced by their co-workers. According to the Theory of Implementation Effectiveness the employees also represent an important factor, in regards to how the adopted changes fit their values. Several of the companies explained how the transition to a green business model was well received by the employees.

Mads: People think that it is fun to do something that makes sense. People are proud of working with something that is up to standards.

Peter: The fact that the employees easily could identify with the project. Everyone is proud of being in a company that thinks like we do, and do more than the others. Everybody thinks about the environment in some way, but we go the extra mile. So if you work here you can say that we are Svanemærket, and you say that with pride. If I think that something is a good idea, but the employees do not, then it won't work. And that includes everybody from the student chef to the sales employee who has to sell our business with pride.

Hanne from Scandinavian Packaging also explains how there has been a shift in the mindset of the employees.

Hanne: Back then the employees would look at me and think, well maybe Hanne thinks this is exciting, but she is probably the only one. When we began the certification it was mostly to have the paper, but it has become a part of the DNA of the employees over the years. Everybody sorts waste and prints on both sides of the paper.

In the case of Komproment, Mads also explained how the green business model has spawned different initiatives amongst the employees.

Mads: One of our employees wanted to work with waste management, and figure out how to sort at the most optimal level. So there was an employee who took on the task, and he looked into where can we get the best prices combined with optimal sorting. And in regards to our food waste we had another who wanted to take on that task, and ensure that what we buy is what we eat, so we do not throw out 30 kilos of food every Friday. We also have some in marketing who ensures that we print on the right kind of paper. So there has been a lot of smaller tasks, that our employees have wanted to work with. And someone took care of changing our lights as well.

All of the respondents from the companies state that their employees and co-workers are proud or enthusiastic about working at a place that concerns itself with the environment. Another important aspect, which includes employees as well as managers, is the culture of the organization. In the PARIHS-framework the culture of an organization refers to its willingness to change, and according to the companies this is an important quality.

Mads: It is the most willing-to-change environment I have ever been in. That is how Komproment is built. We are the speedboat that sails alongside the freighter. When they need 12 kilometers to brake we do it instantly. Because we are such a small company, and because we have our way of working, where a lot of the decision-making is left up to the employees. So we are very willing to change. People are very good at handling changes, and that is what we hire them to do. [...] of course people have to be skillful when we hire them, but even more important is that we can challenge them. We try to be good at delivering the extra service. We have a lot of big competitors, so we try to be different, and we believe that we are good at it. We are good at having a fun environment. People tend to work better if they are in a place that is fun to be in. We are good at going on pup-crawls on Friday afternoons, and we are a bit peculiar.

Peter: It is quite good. Over the last couple of years, without disclosing too much, there has been some changes in staff a few years ago due to our changed focus, also at a higher level. So for the last three or four years we have worked a lot on change. We are in process and have been so for three years or so, and this is a development of our company.

Hanne: On a scale from 1-10 our employees are at a clear 10, they are very willing to change, because they have been used to that for the last ten years. If something new has not happened, they will come ask if something new should be launched. Those who are not willing to change are not in our company, they would not survive.

In all of the companies willingness to change is considered an important element, and based on their responses they are all aware of it as a contributing factor. In the case of Schæffergården, it was also implied that one or more employees were let go due to their lack of willingness to change. The importance of willingness to change was also described by the consulting evaluator, as an important element in implementing green business models.

Stefan: Well it is basically development-oriented companies. It is companies who are used to work with development, who have an eye for opportunities and who are curious, and have a culture where you are always moving. And who also have a culture of being in close dialogue with suppliers and costumers, and who have a good opportunity to geed feedback in both sides of their production. They usually have long-standing relationships, which provides them with a good and confidential dia-

logue. And here is a selection-bias as well. It is development-oriented companies who apply for these types of programs.

According to Stefan, it is often development-oriented companies who are successful in developing and implementing green business models. He also mentions, that only development-oriented apply for projects on developing green business models.

In both of the frameworks and the implementation theory contextual factors are considered important in regards to implementation. In the PARIHS-framework context includes leadership as well as willingness to change, both of which can work either for or against implementation. In the cases of the companies, the management have all been supportive of implementing green business models, which has been one of the key-elements for making changes in these organizations. Furthermore, the companies also mention, that they all consider themselves willing to change and that it is an important aspect to their organizational culture and their implementation of green business models. The Implementation-Effectiveness Theory describes value-fit as being an important factor in implementation i.e. how does the innovation to be implemented fit with the values of the employees. In all of the cases, the companies mention that their employees are proud of working in a place that concerns itself with the well being of the environment, and in one case some of the employees began to develop further on the green business model. Although it is difficult to say whether or not the value-fit of the employees in the cases have been a contributing factor in implementing green business, it is rather certain that the enthusiasm of the employees has not worked against the implementation.

5.5 Documenting the difference

What makes implementation successful? The PARIHS-framework as well as the Implementation Climate theory both prescribe a series of variables that can affect the success/effectiveness of the implementation, but they neglect how to determine if the implementation has been successful/effective once it has taken place. The PARIHS-framework does include an element of evaluation, however, this refers to measurements on which to base actions. The KTA-framework on the other hand includes phases such as monitoring and evaluating, in order to determine if the desired outcome has been achieved. Depending on what is being implemented it may be more or less obvious to determine. However, the implementation of a green business model in a given company, is likely to affect its entire value-chain, thus making the outcomes less obvious. The overall purpose of green business models is to mitigate environmental impacts, but how is it determined if that is actually achieved? This section seeks to determine how the SME's and operators document the effects of green business models.

All of the green business models of the SME's in this thesis has been developed as a part of the projects, which are managed by the operators. This is an important element, given that none of the projects included aspects of monitoring and evaluating. In the following replies the operators answer on how they document the environmental effects of the green business models.

Frank: Well the effect in itself lies in the project. Everything is described in the business case, which works as a template for getting started.

Anne-Sofie: Well the project includes effect-goals related to materials, energy and waste. And that is how determine if we reach our goals. But because the project does not work with implementation that has not been a focus of the project.

Thomas: Unfortunately that is not a part of the project. So the project ends where we deliver the report.

As exemplified through the replies of the operators, none of the projects included any ways of documenting the environmental effects of the green business models, once they had been integrated in the SME's. All of the green business models have been developed in collaboration with consultants, who are presumably qualified to understand how a given green business model affects the value-chain of the SME and the overall mitigation of environmental impacts. It is obvious that a reduced energy-consumption or waste generation is likely to mitigate the environmental impacts of an SME. However, without monitoring and documentation it is not possible to know the actual effects that occurs throughout the entire value-chain and stream of materials once a green business model has been integrated.

Some of the SME's did have some ways of monitoring and documenting the effects of their green business model, however this only extended to the immediate effects.

Hanne: We have a green accounting system, and we also have weekly KPI's. In terms of waste, we can measure the amount, so that was easily measured. And in regards to electricity we measure it once a year, and then we can compare it to the previous year.

Peter: We mostly use the consumption-numbers for example last year we payed this much for heating this year we have used this much. Those environmental terms like CO₂ are not really something we use. But it is difficult to relate to, and I do not know if our guests would be able to.

Based on these statements, the SME's do have some form of monitoring and documentation of their green business models, however it only extends to their immediate inputs and outputs i.e. electricity, heating and waste. Although the SME's do not have any monitoring or documentation of the environmental effects of their value-chain, some of them have a degree of documentation through different types of certification. Komproment have several products that are Cradle to Cradle certified, and Schæffergården has been Svanemærket certified.

Mads: We can quickly tell what is not in our products. Through Cradle to Cradle we also know exactly what is in our product down to 100 ppm. [...] We can look at our product development and know that we are on the right track. We know that our facade systems can undergo Cradle to Cradle.

Peter: In regards to being Svanemærket certified there is a series of goals that you have to define. So there are some minimum requirements.

Through these certifications the SME's have to meet a set of requirements, which they must document to the certification-entity. Both Cradle to Cradle and Svanemærket are concerned with mitigating environmental impacts, and SME's who are certified by them (or others) are likely to mitigate their environmental impacts. However, without monitoring and documenting it is not possible to know for sure.

As previously described the SME's included in this thesis are very concerned with how they spend their time and resources. Thus, it makes sense that performing elaborate monitoring and documentation of their material-streams is not a priority for them. Furthermore, the SME's have all mentioned, that the most important aspect, of green business models, is business.

Mads: We want to do something good, but we have to make some money.

This also explains, why the SME's in this thesis are more concerned with monitoring and documenting the effects of their green business models, that improve their economic bottom line rather than their environmental bottom line.

5.6 Summary of findings

In regards to implementation science the applied theory and frameworks of this thesis, provides a series of perspectives in understanding the implementation of green business models in SME's. The KTA-framework has proven to have several similarities with the process that the SME's and operators have gone through, primarily in the phases of identifying the problem, adapting knowledge to local context and assessing barriers and facilitators. The approach to barriers are very different depending on the framework or theory. However, the KTA-framework, the PARIHS-framework and the Implementation-Effectiveness Theory all include aspects of barriers and enablers that are relevant to the SME's when developing and implementing green business models. The most common barriers among the SME's were time, knowledge and economic resources whereas the most common enabler described by the SME's were their joining of the projects, which helped them overcome several of the common barriers. Context in implementation is a complex subject, which varies between the frameworks and theory. In the KTA-framework the role of context is assessed in one of the phases, whereas the PARIHS-framework and the Theory of Implementation-Effectiveness have a more holistic approach to context i.e. context is not a phase in itself, but rather an integrated element. Furthermore, the definition of context varies between the frameworks and theory, and thus what constitutes contextual aspects is subject to interpretation. The analysis focused on management, employees and willingness to change, all of which are important aspects of implementing green business models in SME's. Management is important in the sense, that if the managers and directors does not support a green business model, it is likely not to be implemented, given that such decisions are their domain. All of the companies describe themselves as being willing to change, which is an important part of their organizational culture. According to the learning-consultant, willingness to change is an important aspect of implementing green business mo-

dels, given that organizations with a strong will to change are most likely to search for new opportunities and ways of operating. In regards to employees the Theory of Implementation-Effectiveness argues that implementation highly depends on how the change fits with the values of the employees. In the three companies all of the respondents described that their employees were supportive and enthusiastic about the green business models. Although it was not determined if this was a contributing factor in implementing green business models, it is likely that it did not work against it. Finally, monitoring and evaluating are two dedicated phases of the KTA-framework. However, none of the SME's included in this thesis had any ways of documenting the overall environmental of their green business models, other than immediate inputs and outputs such as heating, electricity and waste, which was monitored by some of the SME's. In regards to implementing green business models, this poses an issue, as it is not possible to determine if the desired effects are achieved. The environmental effects of green business models are not without significance, given that their overall purpose (ideally) is to mitigate environmental impacts and emissions.

In terms of using implementation science to facilitate implementation of green business models in SME's there is definitely a potential. Through the analysis, many of the aspects of the KTA-framework, the PARIHS-framework and the Theory of Implementation-Effectiveness have proven relevant to consider. However, working with the implementation frameworks and theory, has also revealed several limitations in regards to implementing green business models. For example, the Theory of Implementation-Effectiveness only includes two factors to effective implementation, and although these factors may well be important they are certainly not the only ones. During the interview with learning-consultant, Stefan Brendstrup, the potentials as well as the limitations to the implementation theory and frameworks, were further uncovered, which will be elaborated in the Discussion.

6.0 Discussion

So far, implementation science has proven to be a useful approach in understanding the different factors of implementing green business models in SME's. However, the different frameworks and theory also have their limitations in regards to understanding as well as facilitating implementation of green business models in SME's. The purpose of this chapter is to reflect on these limitations in regards to understanding and facilitating. One of the main reasons for the limitations of the KTA-framework, the PARIHS-framework and the Theory of Implementation-Effectiveness is that they are all generic. Implementation is a wide phenomenon that occurs in a variety of contexts, and thus it makes sense for them to be generic. In the analysis of this thesis the three frameworks and theory have been used in combination with each other, which has yielded a broad understanding of implementing green business models in SME's. However, if the analysis and the interviews had been based on just a single framework or theory, a lot of the factors of implementing green business models would not have been uncovered. If the analysis and the interviews had only been based on the KTA-framework, aspects such as the importance of supporting management and willingness to change would not have been uncovered. Had the analysis been based on the PARIHS-framework there would not have been a dedicated on barriers. However, the Theory of Implementation Effectiveness proved to be the weakest approach to understanding the implementation of green business models, given that it only included two main variables to affect the outcome, and thus elements such as time, knowledge, evaluation and willingness to change would not have been included. Individually, the frameworks and theory all have their limitations as approaches to understand implementation of green business models in SME's. However, when combined, they provide a fairly elaborate approach to understand the different aspects.

Note, the limitations are not to be viewed as a critique of the frameworks and theory in themselves, given that they were not developed specifically to be applied to implementation of green business models. The critique is only directed toward their usefulness in the context of the research question.

As previously mentioned the interview with learning-consultant, Stefan Brendstrup, provided a very nuanced perspective in regards to how implementation science can be used to facilitate implementation of green business models in SME's. Before diving in to these nuances it is relevant to understand how Stefan was involved with the SME's.

Stefan: I was associated as a learning-consultant for Lifestyle Design Cluster and Region Midtjylland to figure out if the programs launched by the region and executed by Lifestyle Design Cluster, if they worked as intended. And in that regard I visit the companies and participate in the collective arrangements. I also send surveys to them and gather data in different ways from the companies in order to learn how they currently operate and how their participation in a given project affect their way of operating.

During the interview with Stefan he was asked several of the same questions as the operators, yet his approach was quite different, as exemplified in the following reply on what motivates SME's to want to adopt a green business model.

Stefan: It is very different, and that points to a central problem in these efforts, because the recruitment is lacking, meaning that you include all kinds of companies who does not benefit significantly. That can be because they are already circular - it is a part of their DNA. So there are a lot of companies who are already circular in their DNA, and they do not really need help to be circular, they just want help in developing their business. [...] So there is a group of companies who apply for the programs without wanting to become circular, rather than to succeed in their circular business. And someone like Lifestyle Design Cluster want to include them because that gives them some good cases, but they are not changed by the project. [...] Then there is a group of companies who join these programs because they consider themselves green in a different way. For example there was a company that makes small windmills for houses or a company that makes food from seaweed - none of them want to be circular, they have no interest in changing their production or their product. They simply believe that the world would be a greener place if their products were more widespread. [...] Then there is a group of companies who think this might be something for us. It could be a carpenter-business where the son is about to take over the dad's company, and thinks perhaps we should look into this thinking green idea. Or it could be someone who makes water-beds which is not an environmentally friendly product, but they say perhaps we could make the plastic tarp with less phthalates in it, which softens the plastic and is really bad. So perhaps they join in order to say that their product is a bit more environmentally friendly. And then there are companies like Trolldtekt, which is a company that joined and thought, our product is already circular - it consists of pressed wooden-fibers and chalk, so that is very sustainable and it can be reused and so on, we just never spoke up about it. So they have not changed a damn thing in their products, they have used the project to having them certified. [...] I can also mention a tiny bed and breakfast south of Odder, who wanted to make a very green bed and breakfast, and that is all well and good, but there are no resource-flows in a bed and breakfast. And furthermore it is far out in the middle of nowhere I do not see how a guest would ever come by, so that would never make a difference. Or also an architect firm in Skive who found this to be very interesting, but there are no resource-flows in an architect firm - they council other on how to build houses. So it is a very broad palette of companies who apply for projects like this, and when I tell you this long story it is to give a more nuanced view of things but also to tell you that the motivation of the companies is very different.

There are also companies who want to do it because they believe that it is the right thing to do. Not because they are green and saved, but because some companies want to behave decent. The first wave in behaving decent was making sure that their employees had a good working environment. The second wave was to take care of the immediate environment - taking care of emissions from the company. So that is companies who basically just want to be decent, because that is a part of running a business - and this is the third wave. Now we are raising our eyes and looking beyond our own property.

Based on the very nuanced response from Stefan, it is clear that SME's have very different motivations for joining projects to help them develop green business models. In regards to motivation, none of the applied frameworks or theory in this thesis includes motivation as a factor. However, based on the response from Stefan, when dealing with implementation of green business models, motivation is relevant to include, given that some companies may consider themselves to achieve a green business model by joining on of the projects under the EU-programme.

Thus, there are several different motives for wanting to adopt a green business model. When it comes to implementing green business models, there is also a great variety in regards to common barriers and enablers.

Stefan: I have to answer in two ways. One thing is that it very much depends on the type of company in regards to the typology I just described, where I distinguish between four or five different types of companies. It is also very different challenges they face depending on if it is a service company or a production company - and if it is a production company with its own production or if it is a company who have they production in China. So their challenges are very different. [...] Firstly, we need to distinguish between the typology of the companies. Secondly we need to distinguish between the maturity of the companies in order to know which barriers to address. We operate with a staircase with five steps. The first step is companies just looking into it and wondering if it is for them. [...] At the second step we find the ones who are trying it out at a small scale, and figuring out what they must change in their production or what are their new demands to their suppliers. And if they find that this is something for them - then where do they begin, what is important and what is not. On the second step they need help in mapping and prioritizing. On the third step they need help in realizing their initiatives. They often lack competences and resources to realize it. At the fourth step we work with innovation - they have to re-design their products or they have to make some more fundamental changes. On the fifth step we have an actual circular business model. And they face different barriers depending on which maturity-step they are at, and that is why I avoid you question of general barriers.

According to Stefan the typology and the maturity are two very important elements to consider before addressing barriers and enablers, as these very much depend on the context. Both of the implementation frameworks and the implementation theory of this thesis includes contextual aspects to some degree. Especially the PARIHS-framework considers several contextual aspects that influence implementation, however as previously mentioned it is a generic framework, and therefore not specified to green business models. By assessing the individual SME, based on a maturity-level in regards to their green (circular) transition, it is much easier to know how which challenges are most likely to occur, depending on the type of SME as well as its level of maturity.

6.1 Undermining green business models

Previously in the analysis it was mentioned that the KTA-framework was the only model that included monitoring and evaluation of implementation. In regards to the cases, the operators did not include monitoring of effects, and the monitoring at the companies was very limited. However, according to Stefan, the lack of focus on monitoring can prove to be a positive aspect of developing and implementing green business models in SME's.

Stefan: Sometimes the consultants warn against having that focus, because it removes focus from the innovative transition, which should be the focus. So one should be careful about focusing too much on the low-hanging fruits, because you end up flying too low. [...] There is actually only one project which had that focus. It is called Sustainable Bottom Lines. They were very focused on the bottom lines, whereas the others were more focused on business development. And those things are very different. The consultants warn against focusing on the bottom line. So we over-sell, because there are far too many projects and consultants who talk about making money from it. And perhaps that is true, but we have very few examples of it, if they were not green already.

According to Stefan, by focusing too much on measuring targets, there is a good chance of focusing too much on the numbers related to profit, rather than innovating to adopt a more circular approach to operating a business. In the end, the strong focus towards measuring savings may result in the green business model not being green at all, but rather an optimized business model.

Stefan: You risk that they lower their eyes rather than lifting them. And they need to lift them to understand the environmental context which their products are a part of, rather than optimizing. I think it is great that companies are optimizing, but call it energy-savings or waste-reduction. All companies should do that. But do not call it circular economy. Reserve circular economy to companies who want to understand how they can circulate material-streams of their production. And do not include all the others, it down-waters the concept and removes focus.

All of the operators and companies included in this thesis have developed green business models under Priority-axis 3 of the EU Regional-Fund-programme. As previously described, the programme does not specify what constitutes a green business model, other than it “contributes in improving resource- or energy efficiency” (Erhvervsstyrelsen n.d.). In that regard, it can be argued that by not having a more specific definition of green business models, the EU Regional Fund-programme weakens the concept of green business models by allowing SME's to join the project and optimizing their use of energy and resources, without actually developing a green business model that incorporates circular economy.

So how does this issue relate to the research question and the sub-questions? As uncovered in the analysis the projects under the EU Regional Fund-programme, represented significant enablers in developing and implementing green business models in SME's. However, if SME's

are enabled to believe they are adopting a green business model, when they are actually just optimizing, that poses a problem to the entire concept of green business models, which may lower the ambitions and efforts in mitigating climate changes and environmental issues.

7.0 Conclusion

Implementation science represents an academic field containing several frameworks and theories. In regards to implementing green business models in SME's these frameworks and theories can provide useful approaches in understanding the different aspects of implementing green business models in SME's. The KTA-framework, the PARIHS-framework and the Theory of Implementation Effectiveness all include relevant aspects that are important to consider when implementing green business models in SME's. Individually, the frameworks and theory all lack various aspects of implementation, but combined, they provide a broad palette of approaches to implementation, which has led to a holistic understanding of the challenges that face SME's when implementing green business models. Through the applied frameworks and theory of the thesis, it was discovered that lack of time, knowledge and economic resources represented the most common barriers that were encountered by the SME's included in the case study of this thesis. On the other hand, the ability to receive funding and guidance by joining the projects under Regional EU Fund-programme, represented an important enabler in developing and implementing green business models in SME's, given that it contributed in overcoming the aforementioned barriers. The analysis also uncovered several important contextual aspects of implementing green business models. Support from management as well as willingness to change within the organizations, were considered to be the most important aspects that contributed to the implementation. Furthermore, it was also uncovered that although monitoring and evaluation, are important aspects of implementation according to the KTA-framework, they were not important to the SME's. However, the lack of focus on monitoring and evaluating the environmental effects of implementing green business models, can in some instances be considered positive, given that too much focus on monitoring and evaluating can remove focus from developing innovative green business models.

In regards to using implementation science to facilitate implementation of green business models in SME's there are strengths as well as weaknesses. The strengths of the implementation frameworks and theory used in this thesis, lies in their ability to address various aspects of implementing green business models, that may be important for the SME's to consider. The weakness of the frameworks and theory lies in their generic approach, which is not ideal for the SME's, given that they face different challenges depending on the type of SME e.g. production or service, and their overall familiarity with green business models. Thus, if implementation frameworks and theories are to be used to facilitate implementation of green business models in SME's they need to be further developed to target the specific type of SME's as well as their familiarity with green business models.

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Appendix A - Interview with Mads from Komproment

Q: What can you tell me about your company's involvement in Focused Value-Chain Collaboration?

A: It was an unknown project for us before we were introduced through Region Midtjylland. We did not know there was an opportunity to get into it. It has been a huge benefit for us as a company to be a part of it. It has contributed in creating the business model that we have today.

Q: So you were sought out and introduced to it - you did not seek it out on your own?

A: Yes we were sought out in the sense that we knew Annette from Cradle to Cradle. It was her who thought that we should be more ambitious in our way of composing our product assortment. We work a lot with designing facades that can be disassembled, which are made up of a front of slate and brick and whatnot, and behind it we have developed a system in aluminum that can be taken down. So she introduced us and said that we could join the collaboration and thereby look into how we could develop a sustainable business model. So she introduced us down there, and introduced the case, and got a bunch of Northern Jutlanders introduced to Region Midtjylland.

Q: What were the reasons for your company wanting to join the project?

A: Well actually, the company as a whole did not want to be involved at first. It was a modeling process that began when we were introduced to the project and approved to the project. And that is how it began to look into how we could work with it. There are three owners in Komproment and myself who are part of the management group. And the group was sort of split in two, or perhaps even three, in regards to who thought it was a good idea and who did not - and why we thought it was a good idea. So that entire modeling process of trying to figure out how this makes sense in Komproment. How can we do something that is both sensible for the world that we live in and have a positive impact, or at least do not have a negative impact, and how can we base a business on it as well, because that was important to us right from the beginning. So the way we got started was that some of the money that we were given to this project, we used to join up with Annette and one of her consultants, and we isolated ourselves in a room for two Fridays, and then we began to brainstorm on how we could develop this business model that could make sense for our company.

Q: So how did the rest of the company get onboard?

A: Do you mean the entire staff?

Q: Well yes, but you also mentioned that the management-group was divided so how did you unite them?

A: Well, one of the owners is the one who is in charge of the economy in Komproment, and he was probably the biggest opposer, because he did not see any good business in this. So we started by looking into what are the expenses of being Cradle to Cradle certified, and then we looked into what are the initial investments when we deduct the money we have been given to develop our business model, and what will it cost us if it turns out to be a huge failure. So we started getting some numbers together, and then we agreed that this is the direction that we are heading in. And then there were some who were in charge of driving the project, and that was me and one of the other owners. So then we agreed that now that we have made the budget, so now we believe in it, now it is a part of our strategy for the next three years and now it has to be allowed to grow and develop. And we agree that this is not a decision that we revoke in six months, it has to be allowed to work. So that acknowledgment was there from all who were personally invested (the owners of Komproment) and then it just started to gain momentum, and it turned out that this was a field we were good in, we were good at designing for disassembly and finding the right producers with the right materials. We were also good at talking about it and being willing to share our knowledge with others who were also interested. So it gained momentum rather quickly for us.

Q: Was being Cradle to Cradle certified the reason you joined the project?

A: No, it was a part of it. We wanted to develop a business model with a sustainable focus. We could see the idea in actively making our systems more sustainable and working with sustainable materials and the circular way of thinking. So it was a two-piece process. There was our product assortment and then there was Cradle to Cradle, which to us is the most comprehensive certification because it has a holistic approach to things. It embraces a little bit of everything, and it made sense for us to use it in our business model. And we have always been the kind of company that traded in respect to our suppliers as well as our costumers. It has always been natural for us for the truck drivers who come and go to come in and grab a shower or a cup of coffee. We have always wanted to treat people properly regardless of who they are. So there was a lot of elements that we could include to our existing circumstances. So it made a lot of sense to spend the fundings on creating a business model that brought us further in that direction.

Q: What were your considerations before joining the project?

A: We considered whether or not it was a waste of time (laughs). We do that every time, because the barrier that you have to forego to get access to the funding is very tricky sometimes. And occasionally you have a project that does not make sense in regards to what you are trying to achieve. This was spot on. We could get fundings to develop our business model. It was damn good. So every time we look into projects we consider whether or not it makes sense, or if we are just pouring working hours out of our business. There has to be a sense to the madness, after all we are from Northern Jutland (laughs).

Q: What were the most important reasons for you joining the project?

A: It was that this was palpable, we got a bag of money for consultants, and we had to put in some hours, and we could end up with a very clear concept for a business model. So the fact that the project was palpable and that we could get help to cover expenses, and that we could get a product that we could keep working on was what made sense. So we quickly ended up saying yes.

Q: How would you describe the process of the beginning of the project to where you are now?

A: The first time we sat in Herning i remember clearly that me and my colleague thought that this was too promising. There were a lot of companies that had started backwards compared to us, meaning that they had thought about getting a green business model before having a product. And it was difficult for us to see ourselves in, because for us it is important that there is a business in it, because otherwise we cannot make money and we cannot be sustainable. We already had a product line where we had made some changes, and we already had a customer base that we could build on. So we thought that we were ended up in the wrong place, but that quickly changed. It was a process where we were well taken care of in a professional way. It was a damn good process.

Q: How would you describe the individual phases of the process from the beginning to now?

A: Well I actually think that we skipped a lot of the phases (laughs) because we are also unstructured and lazy. Of course we were there at the beginning and did all the things, and there are a lot. And that was one of the elements that made us think we do not want to be a part of this. All of the roadmaps and whatnot. It is not until now, with our upcoming recertification, that it is a part of our strategy - where do we want to be in two and three years. Back then this was the barrier that we had to cross, and we sort of did it left-handed because we thought that this is theory and it does not make sense at a practical level in a company. They wanted us to define our company cars and figure out our CO2 emissions, and of course it made sense, it just did not make sense in our heads. Where it really moved something for us was in the processes of sitting with the consultants and got to spare with them and figure out the business model. But initially there was a lot of bureaucracy.

Q: What happened then once you had the idea and business model to where you are now?

A: Well then we just began to work with it slowly. It is not like we went out to our organization and said this is what we do now. We presented it to them, that we were going to be Cradle to Cradle on certain products. We need to start picking up our trash. We have always said that we were picking up 100 DKK bills. We try to eliminate our food waste. We do not buy food on Fridays because we use leftovers. All of those little things starts to grow quite fast. If you work with the culture in a company it does not work to dictate how your employees act. It has to be allowed to grow. We are going in this direction. Next step is so and so, and it is anchored with

those who are personally invested in the company. So every year we set aside some capital if it makes sense. For example now we are being re-certified which costs a certain amount. So we make sure to inform people of what is going on, and then we manage through common sense. We manage through our business model which everybody knows is what we are aiming at. We very fortunate to be a small business. Without sounding like too much of a hippie, we do have a very recognizing style in Komproment, meaning that we delegate a lot of responsibility to our employees. If we manage through common sense then people will make the right decisions. And that is why it has grown in our organization. We set out some guidelines, and then people pick it up. We do not force people to behave Cradle to Cradle, it grows slowly on its own.

Q: What were your considerations to potential problems you could encounter during the process?

A: As I recall it we did not have any. Once we had discussed it thoroughly and agreed that we wanted to act on the project, we had no considerations. We just thought, what the hell, it is not going to cost us anything. And then it turned out to be very good. Sometimes it is good to lock yourself in a room and spare and get all the crap out in the open. So the process was very good. I do not remember that we were concerned or afraid of anything. We knew that we could not be hurt financially, and the setup was clear.

Q: Why did you think it was a good idea to develop a green business model?

A: We did not at the beginning (laughs) we were stimulated through Annette. Before we met her we did not have any idea that this was sensible. It was because she kept challenging us, and do something that was better and could begin to aim for certain things. So we were not there really, but we could quickly see that we could do this. Like I said we have always been good at developing our products and finding the costumers. Everybody wants to do something that is good to some extent. So we could see the idea in finding the right materials, then why not deliver something that does not leave a negative footprint. Something that could be taken down in 50 years and should they have something that cannot be reused they can deliver that to us and dispose of it in the right way so that it might get a new use. So we started to think about this, and we began to see it as an area of business. And that is how it is for us, it has to make sense in both camps. We want to do something good, but we have to make some money.

Q: Which arguments made you change your mind?

A: Initially we were just told that we were not serious, because we had not considered it, so that sort of stimulated us. And also the arguments of knowing what our products contain. We can quickly tell what is not in our products. Through Cradle to Cradle we also know exactly what is in our product down to 100 ppm. So then we began to look into it and ask around. We spoke to Troldekt who are good at documenting and marketing it. So we could quickly see that we also have to move in that direction. And if you look on social media today it is something that everybody talks about, and everybody agrees that we have to change. And it also gave us the

opportunity to be more selective in who we collaborate with. Every week we get contacted by ten new suppliers. And then we are able to say, well you have to be able to do so and so. And then the least serious will drop out. So on an hourly basis it is also a good management tool. Rather than wasting a lot of time. We are not interested in just buying brick, we are interested in the packaging and the overall impact and documentation.

Q: Who was responsible for introducing the green business model?

A: I was.

Q: Just you?

A: Yes none of the three owners wanted to work with it. They had agreed to the project and they supported it, but they had a lot of other things to work on. At the time I was looking for new areas to work with, and through sheer interest I could see the connections to management. A lot of the thought in circular economy are quite convertible to management. So I said that I would like to work on it.

Q: How were you elected to be responsible for introducing the green business model?

A: We are four people in the management group, and the other three did not want it, so they all pointed to me.

Q: So you were responsible for the green business model, has there been any sort of delegation?

A: Yes, well not in regards to the certification because it is easier to have one person assigned to it. And then I spare with our technicians, because otherwise there is just too many cooks. And that is a matter of economy. You know, consultants do not just run around at 150 DKK and hour. So that is a matter of practicality. Through the management tool somethings has made sense to delegate. For example we quickly discovered that one of our employees wanted to work with waste management, and figure out how to sort at the most optimal level. So there was an employee who took on the task, and he looked into where can we get the best prices combined with optimal sorting. And in regards to our food waste we had another who wanted to take on that task, and ensure that what we buy is what we eat, so we do not through out 30 kilos of food every Friday. We also have some in marketing who ensures that we print on the right kind of paper. So there has been a lot of smaller tasks, that our employees have wanted to work with. And someone took care of changing our lights as well. We also have some technicians who are constantly working on new solutions based on Cradle to Cradle. All of our facade material has to be in compliance with Cradle to Cradle. Not of all of them are, but our ambition is for all of them to not have a negative impact.

Q: How did you ensure that the people responsible for introducing the green business model had the necessary qualifications?

A: We did not (laughs) it is purely driven by the joy of working with it. Often attitude equals action. How do you solve an assignment; you do that by dealing with it. And that is where we have found out that we are among the best in this game, because there is a lot of theoreticians, but not a lot of practitioners. There are plenty who talk about this. We found out that we are good at walking the talk. None of us have high degrees in education, but we are adequately provocative to say that we are able to move some things. And we found there is a lack of that in this game. We discovered that we are good at being practical about things, and saying okay, we are gonna try and do this. It may fail, it often does in eight out of ten things that we develop, but sometimes we are spot on. But we cannot just keep talking theoretical, otherwise nothing happens. So to sum up we had no qualifications for doing this (laughs).

Q: How would you describe the culture in your company in regards to being willing to change?

A: It is the most willing-to-change environment I have ever been in. That is how Komproment is built. We are the speedboat that sails alongside the freighter. When they need 12 kilometers to brake we do it instantly. Because we are such a small company, and because we have our way of working, where a lot of the decision-making is left up to the employees. So we are very willing to change. People are very good at handling changes, and that is what we hire them to do. You mentioned qualifications, and of course people have to be skillful when we hire them, but even more important is that we can challenge them. We try to be good at delivering the extra service. We have a lot of big competitors, so we try to be different, and we believe that we are good at it. We are good at having a fun environment. People tend to work better if they are in a place that is fun to be in. We are good at going on pup-crawls on Friday afternoons, and we are a bit peculiar.

Q: How has the management dealt with introducing a green business model?

A: When we began we had to show that it made sense. It was an expensive post when we had to be Cradle to Cradle certified. And at that time I had to prove that this made sense. It is difficult to measure which sales are based on us being Cradle to Cradle. But we had to prove that parts of our projects were driven by our certificate and our products. Today it is an inherent part of our DNA, and it is a permanent part of our management group meetings. So today it is an integrated part of our decision-making.

Q: So how does the management feel about the green business model today?

A: Very good. It is integrated. And it is still the same pattern. One of the owners can see the sales perspective and another can see the technical perspective. Our owners are made up of a salesman, a technician and an economist. So they have three very different ways of looking at

it. And there is no doubt that the evaluate it differently. But today it as an important part of our business. The owners no longer question that this is the direction we are heading in.

Q: So you were the one who convinced the owners of moving in this direction?

A: Well we all sat in the same forum and I could hear the different arguments. And right from the beginning I wanted to work with this. Both for selfish reasons as I thought it was fun to work with, but I could also see some business opportunities. So all the arguments that went against me I quickly turned around. The entire process of agreeing on doing this was the most interesting part.

Q: So the owners have been presented to the same arguments you have, and then you had to keep convincing them?

A: Yes, they heard the same things I did, and then the trick was to get them to open their wallets. But it was not really that difficult, there was a bit of resistance, but that is how it should be. That is how we evaluate everything else.

Q: How have you, during the process of developing and introducing the green business model, been able to assess if you were moving in the right direction or not?

A: Well that has been difficult, as it is difficult to measure. We can look at our product development and know that we are on the right track. We know that our facade systems can undergo Cradle to Cradle, that we can measure. We cannot measure if we get projects based on Cradle to Cradle or if it is because of the price or if the architect loves our product or if it is something else. But we have a feeling that it a mix of the different aspects. We are not deselected because we know what our product is and we know the we can contribute in DGNB-certified construction for example. So it is a very difficult thing to measure, we have to go with our gut. It is difficult to know if people choose us because of Cradle to Cradle or our green business model. That is also why we think that companies that have a green business model without the product will have a difficult time. We believe that business and wanting to do something good has to make sense. We can have the best of intentions but if there is no profit to be had it does not make much sense, and the business will ruin itself.

Q: Although it has been difficult to determine if you were moving in the right direction, has there not been any indicators?

A: We have no doubts that we are moving in the right direction, but we cannot measure it. We can especially feel it in our business culture and our way of working and interactions with suppliers and customers. We like that people treat each other kindly. All of those human aspects that you can include. Another thing is that our suppliers sign our Code of Conduct, saying that we do not use child labour and whatnot. I know that it is just a piece of paper, but it is still a letter of intent, saying that we take it seriously. We do not want to be caught in other peoples

screw ups, and have our name dragged through the dirt. We want to act according to what we say. So we believe in it. We can also measure that we get a lot of inquiries, not sales. But we get a lot of inquiries through our marketing regarding sustainable construction materials and architects also contact us. We have gotten a huge network of architects, which we were never able to get previously, and entrepreneurs, engineers, house associations, so it has opened some doors that we could not previously open.

Q: What about economy, have you not at least been able to determine that you were not moving in the wrong direction?

A: Given that we cannot really point to our sales it comes off as just an expense (laughs). But there is no doubt that it has been a positive contribution to our business. We do not doubt that for a second, otherwise we would have closed down the project, and then we would not be up for a re-certification in Cradle to Cradle. So we know that we are making money off of it. And if we look at articles we have received somewhere between 250.000 DKK and 300.000 DKK in free media coverage in the large construction magazines, which we would otherwise not have gained. So of course we have made money on it, which is just awesome.

Q: What were the most common problems and barriers that you encountered during the process of developing and introducing your green business model?

A: It is difficult to say what it was in the beginning, because we did not really run into anything other than the bureaucracy. But once you work with it you learn that what you can do seems inadequate. And that leads to you wanting to do more and do better. And it is very difficult to know which way society is moving, and what the government wants us to do and which way to go. Do they want to design for disassembly or do they want to use old materials or what. It is an area in which there is a lot of talk. So it is not really a barrier, but it is frustrating. There is too much talk and not enough action and not enough help to the companies that actually want to do something. If you look at soft plastic nobody wants to touch it right now, because there is no business in it right now. So it would be nice if the danish government started acting. The frustrations of everything moving so damn slow, in regards to the direction we want to move in, is what I find to be the most frustrating.

Q: What about time and resources?

A: Time is always a factor. And maybe that is because we are a small company. Perhaps larger companies have more resources that they can devote to it. We could have used more hours, or someone who knew a lot about it. That would have been great, and it would have freed up some resources. Our challenge was that the person responsible for acting on this was also responsible for getting the products out to the costumers. It was a reallocation of resources, but that is just how it is in a smaller company, regardless of what we are doing.

Q: What were the elements that contributed in the process of introducing the green business model?

A: People think that it is fun to work on something that makes sense. People are proud of working with something that is up to standards. We also use it to be first movers, so it creates a lot of value internally as well as externally. That has been one of the positive effects of this project, which we had not even considered back when we first started. But of course also that people have been willing to adopt it. The process is often a lot more fun, and it has been great. And we have also gotten an additional leg to stand on, sure we can talk about prices, but now that we have a product which is not more expensive, then why not choose a product where you know that the solution is up to standards. It actually has a certificate in the back. I do not think that there has been anything negative. Of course there has been challenges, but mostly due to time and resources.

Q: What have been the most important elements in making your green business model succeed?

A: That we have been able to make money on a sustainable product from day one, because we already had the costumers. That was important. We were not under pressure. We had our core business next to it. Today our assortment is 50/50 but when we started it was 80/20 or 90/10. So we have had our existing business, which could support our company at the beginning, so we have not been pressured and lacking liquidity. So we have been able to work in peace and quiet with it, and testing and certifying it. So one of the best advice I can give is to take it serious and make sure that it makes sense economically. Otherwise it will stay an intention. We have been fortunate that we could make money off one business and then put it into another.

Q: Other than economy what other elements would you say is important in succeeding?

A: To go into it with an open mind. It is not certain that you can measure any profit right away. You have to go with your gut, and see if it fits into your business structure. Does it make sense or not to have a sustainable profile. It does to us, and we are convinced that it is an important factor in our company. You have to feel it out and talk about it. That is what it is all about. Let people know what we are doing and why. So that it also makes sense for the employees who have to carry out that message. You must be ready to share your knowledge. It is a huge area in regards to getting inputs. We are very good at entertaining each other in closed forums, but you have to dare to be a part of it. You may be part of one or to networks of knowledge sharing, which does not benefit you, but perhaps third time is the charm. It is a different way of running a business. We come from a profession which is very conservative and very closed, but it does not take much time to copy the competition, so we are competing on entirely different parameters. And it is completely different things that we are talking to our customers about. We must have collaborative relations and not just standard customer-supplier relations. You should have an open mind and let it grow.

Appendix B - Interview with Peter from Schæffergården

Q: What can you tell me about your company's involvement with Sustainable Bottom Lines?

A: It began with a feeling from our costumers, wanting to know what our opinions were in regards to sustainability, the environment, climate, organic foods, food waste and all of those things. When we enter a collaborate with a big company with courses over a couple of years, they would like to be associated with a set of values. For example there are some pharmaceutical companies who have a strong attitude towards the environment of their collaborative business partners. So that was the basis for incorporating a sustainability policy in our business model. So I was contacted by Gate 21, asking if we wanted to be a part of this project with fundings to implement and uncover potentials. So that was quite the fortunate coincidence. Because it is a new field, and where do you begin with a company like ours. And especially in uncovering the costs of switching to organic foods and so on. It would require some physical changes to our company if we should invest in a new heating system in order to be as sustainable as our customers would like us to. So we got some help in uncovering our potentials and prioritizing our efforts, which we would probably not have done if we had not received the help and sparing that we got through Sustainable Bottom Lines.

Q: So what was it that made your company wanting to be a part of the project?

A: It was that we could get support and guidance in developing a green business model.

Q: What were your considerations before joining the project?

A: Yield - the economy of it. The uncertainty at the beginning in regards to what does it cost, is it really true that we can get public funding to cover a certain amount of consulting hours. We were not entirely convinced that this was a good idea, but it seemed without risk (laughs). It seemed risk-free to uncover our potentials.

Q: So if we are to speak in headlines what were the most important reasons for joining the project?

A: I think it was the opportunity to get guidance which we did not know where else to find.

Q: How would you describe the process from the beginning of the project to where you are now?

A: The first meetings we held were, to me, a bit uncertain in regards to the yield, that was not really clear to me. But as things progressed I began to understand what we can do and what our opportunities are. So the collaboration and the yield has developed over time, so that here in the last phase we are the ones who have benefitted the most. I definitely think that we have got-

ten a lot out of it. I can say with certainty that we would not have done as we have done without that opportunity.

Q: How has your company changed from the beginning until now?

A: It has created a focus around the environment and sustainability, which has become an integrated part of our business. It started with me and the initial talks we had with Gate 21, and then it became a common project that involved all departments of the house. For example, now that we are attempting to be certified at Svanemärket, that involves all employees to some degree. All department managers must make a great effort in order to implement this in the house. There is a lot of focus on climate and environment everywhere today, so it was an easy thing for us to implement because everyone knows that this is important, and everyone knows that it is important to our customers as well. So let us go all in and see how far we can take it and benefit from it. Our 1400 square meter vegetable garden is now flourishing and providing the kitchen with spinach and salads, and it has become a part of our profile. It represents a certain way that we would like to appear. We have a strong attitude towards the environment, and we are a company that represents a form of calmness and is located natural surroundings. So it makes a lot of sense for us to have this profile. I think it has also been self-reinforcing because it makes a lot of sense for a business like ours.

Q: How would you describe the different phases your company has undergone?

A: Well, the first project was installing a bio-shredder in our kitchen to handle our food-waste. That was when I realized, when we did the numbers, how much it makes sense to be a part of this project. I think that made us go all in and uncover everything that we could. Because all of the sudden we had a case, which hit the project spot on. We used to pay a lot of money for getting rid of bio-waste every month, and now we had the opportunity to put it into our bio-shredder, which sucked out the bio-mass into a big tank, which was picked up to go to a bio-mass facility to make gas out of it. That was a very good story to tell, but the crazy thing was that we saved several thousands every month, by doing it this way rather than the conventional way. And that includes the financial costs we had, we did not have the money to buy a bio-shredder, but they had some great leasing-solutions, so in spite of the financial costs we still had a surplus of several thousands each month. So we got a more green business model, a great history to tell to our guests and improved our bottom line from day one. And that was how it developed, also as we started to uncover our energy use in the kitchen, which has a lot of energy-heavy machinery. And there are two things to it, we are putting less of a strain on the environment and we have a good story to tell - but we also save money on it. There is no need to have a big machine running before you need to use it, and there were a lot of bad habits, which we have now eliminated or discussed, or bought a new thingy which uses less energy. Our consumption is declining, and it is cheaper for us to operate. So it all adds up. It has been the most amazing eye-opener. A healthy operation is part of having a green business model.

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Q: Which arguments have you used in order to determine which areas to pursue?

A: Some things made sense for us to act on in regards to our profile as a company. For example Økologisk Spisemærke, is not where you make your business more profitable, it only made sense due to our green profile. Organic commodities are 20% more expensive, and that is just how it is. So you have to put some thought into it when you change your operation to being organic, and the kitchen and your menu must be put together in a new way with less meat and more vegetables and more focused on the season. And that is difficult to do, so we had a consultant help us through the project, to uncover how we could deal with it.

We have always been focused on the story we were telling. On the bottom line the project was the higher purpose, we want to do something good for the environment. We want to reduce our emissions, and we want to tell our guests that we have made an extra effort. That has been the argument throughout the process. It gives us a sense of credibility both outwards and inwards. It is not difficult for us in the management to say to our employees that we are going through with these projects - they understand that and think it is exciting to work like this, and they can say that they work at a place that have just been Svanemærket as a hotel and conference center. There are not many in Denmark who can say that and it makes me proud. Everybody has some form of opinion in regards to reducing emissions and taking good care of the environment and so on - it is important. Nobody, or not many at least, thinks this is a bad idea.

Q: What were your considerations to potential problems when introducing the green business model?

A: Well, the shift to an organic kitchen, we were definitely concerned whether or not we could limit our expenses. No matter what, there is an economic perspective, and we have to operate a business. So that is definitely a part of it. At the end of the day we need to make enough money to pay our employees, and make sure our house is in order. So economy is a factor when shifting to organic food or becoming Svanemærket certified, we need to look at the investments and if our operation is impaired because we need to use a certain type of cleanser or whatnot. So it is always there. And that is where there is a lot of consulting hours, Sustainable Bottom Lines have been a part of this uncovering, what does it cost and does it make sense. And some of the things we had our doubts about, but to us they had a lot of marketing value. On the other hand once you get started with a process like being certified for Svanemærket, there is an energy and waste reduction that happens automatically. So there are a lot of things, but so far I have not experienced anything that is financially impossible or does not make sense. Some of the consulting hours have been spent on ensuring that that happens, the project had to make sense.

Q: How did you act on the recommendations made by the consultants?

A: First of all we involve those employees and department managers who are affected, given that they are the ones that have to pull the project through, and they are the ones who can ask the right questions. We were sort of delivered from Sustainable Bottom Lines to the right people who had to install the machinery, and the people who had to approve our certification. But they were still encouraging us to ask if we had any doubts. It was a very nice and smooth process.

Q: So they sort of took care of you?

A: Yes, sometimes the risk when hiring a consultant, is that once they have solved their assignment they are just gone. And then you are left thinking wow that was a lot of money for not very much, and we did not get everything we wanted. So there has been an absolute common interest in ensuring that the project was delivered successfully for everyone involved. That was very nice.

Q: You mentioned that you quickly involved the employees and the department managers. Was it important to you to involve them right away?

A: Yes, definitely. It is a very natural part of our business, to involve people early on, regardless of we had to implement a new breakfast buffet or four new rooms or whatever. We know that we cannot do anything on our own. We need the experts in-house to get involved early in order to ensure that the project starts on the right foot, and that we reach our goals. We need them. A hotel is very specialized, so for example our real-estate manager knows everything about the house down to the last faucet. So he has to be involved early on if we begin to discuss energy initiatives in our systems. The same goes for the kitchen manager who has to be involved early when we discuss transitioning to organic foods. Chemistry has also been an important part of being Svanemærket certified, so we have spent a lot of time with the housekeeping manager, because none of us could know how that was put together in terms of which products you use for what.

Q: What convinced you that developing a green business model was a good idea?

A: The first project with the bio-shredder was so palpable, and we could see that it was a good idea and a good story, it worked and we were saving money. So why not keep going. But before that there also had to be a spark in us from Gate 21, and I do not think that I was absolutely sure about what they wanted at our first meeting, but I had a feeling that we needed to do this, and it seemed without risk. I could test it, and they were willing to help us. Once we started to understand the project, they were super quick to jump on anything. For example, once our vegetable garden had sort of been set aside because we were working with some people who said it was not possible, or it was possible, but not a good idea. And it can seem crazy to develop a vegetable garden, but nothing was too small or too crazy as long as it benefitted the environment. So although we might be a bit crazy we were able to get the help in spite of our unconventional ideas, or at least figure out if it was complete madness or if it was worth a closer

look. So there has also been some enthusiasm and interest from Gate 21 in supporting us, or coming up with quirky ideas, which has been very beneficial. They have been a sincere collaborative partner.

Q: How did you convince the entire company that it was a good idea?

A: Every year we have these kick-offs. So in January all of the staff meet, and the general management present a plan for the coming year. So that we have a feeling of where we are going. We began working with Sustainable Bottom Lines in 2017, and through 2017 things started to happen, so at our kick-off in 2018 we presented this to all the employees, saying that we believe this is the way to go. We are not sure where we might end up, but we know that our customers and guests think that our policy on the environment is important. So there has been a common consensus. The department managers have had their individual projects, and so the employees start to become a part of that process. For example, all of the employees in the kitchen have been sorting waste in the food-bucket, to see if some of the things could have been reused rather than throwing it out. So the entire kitchen-staff have been sorting food-waste, and everybody thinks it is a cool idea.

Q: What were your reservations in transitioning to a green business model?

A: Well, our first thought was that this is not healthy a healthy way to operate. We have to use expensive cleaning supplies, and we have to use expensive raw ingredients, and also I often get contacted by people saying: "We are very good at this, would you like to buy some consulting hours from us. We will help you through whatever" - which I might as well have done on my own. So you are often forced to deal with consultants.

Q: You are not the first one to mention this. Is it common to have a certain skepticism towards consultants?

A: (Laughs) Yes, they are out there. There are many out there who know that the companies want. As soon as there is a demand on something, which is difficult for the companies to implement. For example last year when there was that whole GDPR-situation (The EU law on protecting personal data) we were spammed by consultants, and we were able to handle that just fine on our own. But sometimes you were tempted to call the first one up, because it was too confusing or whatever, and say can you help us? In the end we just contacted our accounting firm because they were more than competent at handling this, and they have to help us. Just yesterday I had a meeting with a company, who were out, noncommittal as they say, and look at our energy usage in order to estimate if we had a potential for more reductions. And then they present an offer of 90.000 DKK to get these initiatives implemented, without anything further. They were sent away. There were some adjustments to our heating and so on, but nothing concrete (laughs). And there are a lot of them. So when we receive an e-mail from someone wanting to help us implement a green business model, you get a bit skeptical. There are

a lot of consulting companies that know, that when these needs arise in society, they try to get us to buy their consultancy way too expensive.

Q: Who was responsible for introducing your new business model?

A: Of course there was me as the Director. I am the one who decides that we are moving in this direction, and afterwards it is the department managers also have to get it rolling. And there are a lot of things that need to be coordinated and implemented, like the kitchen and cleaning and so on. So there is something specific to every department.

Q: How have you chosen who was responsible for introducing the green business model in the departments?

A: Well that was up to the department managers, and it still is. We may in the future appoint some ambassadors or something. I know that with the energy check in the kitchen they appointed someone to be in charge of keeping an eye on the machinery, making sure it did not run for no reason.

Q: So the department managers were the obvious choice initially, and they may begin to delegate certain tasks in the future?

A: Yes, I could see that as a natural development.

Q: Were you confident that the department managers were qualified to handle their different projects?

A: Yes, definitely. It is not more difficult than the work they already do. They just have to change their routine a little bit. There is not really a big cultural change in that sense. So of course I was confident that they could handle it. And there has been a natural interest from the department managers in making this work. So we did not have to fight anyone, to ensure they remembered to buy the correct cleaning supplies and so on. We have also included our suppliers, which is also a relevant aspect. We had to make some demands to our suppliers.

Q: How would you describe the culture in your company in regards to being willing to change?

A: It is quite good. Over the last couple of years, without disclosing too much, there has been some changes in staff a few years ago due to our changed focus, also at a higher level. So for the last three or four years we have worked a lot on change. We are in process and have been so for three years or so, and this is a development of our company. If you look at Maslow's hierarchy of needs, we are at the top working on self-actualization, where we were lower not that many years ago.

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Q: When introducing the green business model how have you been able to determine if you were on the right track?

A: Well, that is a good question. We have not really had any doubts. That may sound strange. Well, at a time we had to make a new cooperation agreement with Region Hovedstaden. And it is not unusual that they sneak in a series of demands that we as a company have to ensure that we know how to handle. And there is a series of questions about environmental considerations and so on. And those questions are directly copy pasted from Svanemærket's questions of certification. I sat with those (laughs) while we were making this cooperation agreement. So made us go all in. If we can see that our top five costumers have these demands, which stem directly from Svanemærket, there is no going back. We go all in, because then it is about ensuring our business, that we are ahead of our competition.

Q: During your implementation of the various projects in your company have there been any mechanisms that you could use to determine if you were moving in the right direction?

A: Well, we can see it in our bio-waste. And we have reduced our energy consumption, but that was part of a greater project. The most important difference is in the focus we have in-house. Everybody cares about it. Everybody watches out for food-waste, making sure it goes to the bio-shredder. There has been generated a focus in the house.

Q: What about economical parameters, have you been able to see if you have saved any money?

A: Yes, but our electricity and heat are joined, and we can see that we have saved some, but it is difficult to say how much is the result of Sustainable Bottom Lines, because we have had a new energy system installed, which covers the entire hotel. The most obvious case is our bio-waste.

Q: What has been the most common barriers and problems you have encountered when introducing the green business model?

A: The most common problem has probably been to get the suppliers onboard. A lot of this is about looking at the goods that we bring into the house. And we have to get our suppliers off auto-pilot and make sure they understand our demands. Of course that kind of goes beyond what you can expect from a supplier, but fortunately we have some good collaborative partners, so that was alright. It has also given them new ways of thinking. They can tell that perhaps others will come and raise the same questions.

Q: How did you handle that problem?

A: Well, the department managers had the contact with our suppliers (laughs) and then at some point it turned into a stale mate, and they had to involve me. That is just how it is. Sometimes the director has to call them up and then things usually get fixed a bit faster. But what it really is about is that we had to push our suppliers and say you have to make an extra effort, if we have

to keep working together. A good example is that when being Svanemærket certified we are not allowed to have GMO's in the house. But I cannot tell if my supplier uses GMO or not. Because they are not required to reveal that in Denmark. And we have started a dialogue on that with our suppliers, and they have invited us to coffee, and would like to know more about how they can accommodate us and our demands. And that is very interesting, and to me that is a part of our run off that we are able to make a difference all of the sudden.

Q: Were there any potential problems you had anticipated and tries to avoid in regards to implementing the green business model?

A: A good example of that would be the organic transition in the kitchen. By definition it is extremely difficult when your ingredients become 20% more expensive, and still maintain your consumption at a sensible level. We knew that. And we have not reached our goal yet, we are still adjusting. We knew it would be difficult.

Q: So how have you handled it, given that you knew it would be difficult?

A: Well that was also a part of the project with Sustainable Bottom Lines, that we had the consultant help us in structuring the transition. A classical model is saying now we have to be organic and buy after that, and start buying organic. And then your consumption just takes off, because you have not adjusted your menu's and so on. There are a lot of aspects in it - including food-waste and how you use the ingredients. For example do we just use the heads of the cauliflower or do we also use the stem. That is also a part of the considerations when shifting to organic. So all of that training and planning have been important for us to be on top off. So we have made a manual for the kitchen to use. So we can look in that if the economy is not where we would like it to be.

Q: What were the contributing elements in introducing the new business model?

A: The fact that the employees easily could identify with the project. Everyone is proud of being in a company that thinks like us, and do more than the others. Everybody thinks about the environment in some way, but we go the extra mile. So if you work here you can say that we are Svanemærket, and you say that with pride. If I think that something is a good idea, but the employees do not, then it wont work. And that includes everybody from the student chef to the sales employee who has to sell our business with pride. The credibility comes from the employees.

Q: Were there other elements that you knew would benefit the project, and you thereby tries to promote?

A: Well generally you are forced to develop your business. You have to look through it to see how we use our energy, how is the heat-loss in that wing, why is the water consumption over here higher than in the basement, how much water does our old dishwasher use compared to a

new one, should we get a new one, and so on. We have gotten to know our house in an entirely new way, because we raised some questions during the process. So I have learned more about energy consumption over the last few years than I ever thought I would need. But all of the sudden it was interesting, and it makes sense to figure out where your energy is being used. The knowledge about our business has been very positive.

Q: What about the pride among your employees was that something you tried to promote?

A: I think it came about all by itself. Perhaps it helped that we began to talk about it. Everybody cares about the environment, but we started to look at what we are able to do. We have had these individual projects that the employees could relate to.

Q: What have been the most important elements in making this project succeed?

A: That is a good question, there are a lot. It is boring to say, maybe because I am business-oriented, but the fact that it is an economically good idea. That we can create a business that has a sharper profile outwards, and you can say that is what we are all about at Schæffergården. Also an ongoing positivity. It has been a super collaboration rather than just consulting hours. And the consultants have had the same spirit and enthusiasm of making this work as good as possible. At no point did I feel forced to anything, and that was also an important part of the drive.

Q: Have you had any clear goals for what you wanted to accomplish as a company?

A: No I do not think so. I think I know where we are in the process, but I do not know where this will end. It is difficult to put a goal on it. What we have created has had brought on a common identity at Schæffergården. When we launch a new project we ask ourselves, does it make sense in regards to sustainability.

Q: So you have not had any specific goals e.g. we have to lower our energy use by so and so?

A: No, we have not.

Q: So it has more been a general desire to make a change?

A: Yes, well at least to make a model that we could identify with. When I get a report from Sustainable Bottom Lines saying congratulations you have saved 60 tons of CO₂, through your projects. It is difficult for me to relate to, and it is for the employees as well. What is 60 tons of CO₂? We can relate to that we used to throw out 21 tons of food-waste, and today we only throw out 15 tons. That is something you can relate to. In regards to being Svanemærket certified there is a series of goals that you have to define. So there are some minimum requirements.

Q: So being Svanemærket certified was not a goal at the beginning?

A: No, that came later. 110

Q: How do you plan on documenting the effect of your green business model too keep track of your progress?

A: That is a good question. We mostly use the consumption-numbers for example last year we payed this much for heating this year we have used this much. Those environmental terms like CO2 are not really something we use. But it is difficult to relate to, and I do not know if our guests would be able to. But there are a lot of aspects of communication that we could develop on.

Q: But it can be difficult to know if your focus on food-waste has any real impact if there is no documentation?

A: You can say, that a large of that lies in being Svanemærket. It is an extremely tight system. There are many requirements. The entire certification and application process has taken six months, and that is because the requirements to documentation are so strict. Basically we wanted to find the most strict certification available, because that would cover all documentation. If we are Svanemærket they cover all of those things like food-waste and water consumption and so on. So that is our documentation. Svanemærket is the culmination of our environmental efforts. It is our exam. It is documented and verified by an entity.

Appendix C - Interview with Hanne from Scandinavian Packaging

Q: What can you tell me about your companies involvement with Waste to Resource?

A: We are a company who produces packaging and plastic bottles and bottle-caps, which means that we have some plastic waste, and we could see through our green accounting that we lost some millions that we would like to recycle.

Q: Why did your company want to be involved with the project?

A: That was due to our large amounts of waste, which we could see through our green accounting. We could see that there were a lot of money involved with energy as well as waste. We had a goal of improving the numbers compared to the previous year. For example 5% less energy or 5% less waste, but at the time we did not meet our goals, and that is why we decided that we needed external eyes to look into it and get some help.

Q: Did you have any considerations before joining the project?

A: No, we are a very open company, so we did not think do we have time for this, because there were a lot of money to be saved, so we just wanted to get started.

Q: How would you describe the process from the beginning of the project to where you are now?

A: When we began we had almost a million DKK worth of waste, which we would look into the following year. Once we received the report we started working on the three out of the top five improvements, which we did rather quickly.

Q: Could you describe that further?

A: Well it has been a while, and there were two processes. The first process was electricity. We wanted to reduce our waste and energy consumption by 5%. At the time, nobody could help us with the waste, because we had it under control, but we did not have the equipment or the qualifications to uncover our electricity consumption. So when we received the report it described some compressors that were running. So when we saw the numbers, we saw at one point there was 1,3 years of payback. They were listed at the front page. Sometimes when you get a report you do not get much other than a conclusion. But here it was good and we could easily see the payback. One item took 15 years before payback, so the items with the shortest time of payback were launched immediately. So in that sense it did not require much, we just thought wow, why have we not done that sooner. And then there was another pool we joined where we there was an opportunity for an additional project, and that is where we worked on waste.

Q: Were both projects associated with Waste to Resource?

A: I am pretty sure they were. Yes. My answer is yes.

Q: How would you describe the different phases of the project?

A: Well, initially we had a meeting when the project launched. It was about what is it and how does it work. We received some great help in being helped through the project. If it had been bureaucratic with having to fill out here and so on, we never would have gotten through with it. So there were project managers throughout the project, who kept track and were passionate, and who also found it interesting in uncovering potentials. The people from Waste to Resource were also passionate and helpful in finding consultants. So we contacted them and got some offers, which we based our decisions on. And also on where could we feel the passion and who had the qualifications. So we were definitely well taken care of through the process. If that had not been there I will honestly say that we would have gotten this much benefit from it, and perhaps we would not have reached our goals at all. So we have benefited tremendously from the project.

Q: You mention passion, was that an important factor to you?

A: Yes. If I were sitting in front of some who did not really care, and only showed up because they had to. I think we would have put it off to next week. So if you meet somebody with passion you start thinking, we better get a move on. And if we got stuck, they were good at getting us back on track. So definitely yes.

Q: You mentioned that there was money to be save, but what about your passion in reducing environmental impacts?

A: Well, it is both. It is nice when you get the report and can see there is a reduction.

Q: So how did you act on the report that was delivered to you?

A: We have an environmental-team, and I immediately sent the report to them, and we had a meeting the following day, but before we even had the meeting the technical manager had already moved on some of the things, because we were baffled by how much we could save. We used to think that we will deal with this when there is time in six months, so this was really an eye-opener. It is low-hanging fruits, and we are not going to wait to act, we do that now. So the setup of the report with the payback on the front page was very good. The fact that I still remember it after a lot of other reports just goes to show that it worked.

Q: Did you have any considerations in regards to potential problems you could encounter during the process?

A: No, that is not how we do things. We are a company who has quadrupled over ten years. If we believe in something we go for it. It is a gut feeling. Given that I am the owner, if I am passionate about it, then the employees are onboard.

Q: Why did you initially think it was a good idea to develop a green business model?

A: We were actually environmentally-certified, ISO 14001, before everyone else were. Nobody was thinking about it, not costumers or suppliers. As a business-owner I believe in two things. Other than making money, when you own a business you have a responsibility towards the environment and you have a responsibility to the mental working environment. So other than running a business we have had a focus on these two things, making sure we do something good for the environment and get the employees onboard. If they would begin to sort waste here, then perhaps they would do the same at home. So getting into it is the DNA of our company, we have to take care of the environment. And today everybody talks about it, but they did not back in 2012, when we were certified. Back then the employees would look at me and think, well maybe Hanne thinks this is exciting, but she is probably the only one. When we began the certification it was mostly to have the paper, but it has become a part of the DNA of the employees over the years. Everybody sorts waste and prints on both sides of the paper. Today everybody talks about the environment, and how we must take care of it. There was none of that, not even when we launched the project. Even in the election today. But it has also moved from the bottom. I had a meeting with the in the plastic industry yesterday, and now we are saying we do not want to wait, not even for the politicians. We are not waiting until after the election. We as business-owners stand together and say, we are not waiting for the politicians, because this has to happen fast. So as a business-owner I think it is great to figure out what we can do for the environment, and then we assume that the politicians at some point also want to do something.

Q: Did you have any reservations in regards to changing to a green business model?

A: No, all of those standard questions you have, the answer is no, no and no (laughs). Nobody were against it and perhaps we are just different in that way.

Q: Who was responsible for introducing the green business model?

A: That was me.

Q: What about delegating assignments?

A: Yes, I have a coordinator who also was very passionate about it. She is good at managing projects. I am the one who joins the meetings, but she is good at sending out the e-mail and following up on certain things.

Q: How did you feel qualified for introducing a green business model?

A: Well, given that I am passionate about the environment, I just jumped into it. And given that I have developed our environmental management-system I felt well qualified in the environmental aspects. But when I could see we were lacking qualifications or time I was able to figure out how to deal with it.

Q: So was that a question of educating the employees or what?

A: Yes, we educated the internally.

Q: Could you give me an example?

A: Well, for example when we had to turn on the machines, when we could see they were just running. There would be an instruction in remembering to shut down the machines in order to use less power.

Q: How would you describe the culture of your company in regards to being willing to change?

A: On a scale from 1-10 our employees are at a clear 10, they are very willing to change, because they have been used to that for the last ten years. If something new has not happened, they will come ask of something new should be launched. Those who are not willing to change are not in our company, they would not survive.

Q: When introducing the green business model how have you been able to determine if you were on the right track?

A: We could see that on our measurements, and see how things improved.

Q: What were the most common problems and barriers you encountered during the process?

A: Well that was getting the liquidity because it was not free. So getting the finances to get things moving.

Q: What about having time for it?

A: Well that was also a limiting factor. But some of it were handled externally.

Q: How did you handle these problems you encountered.

A: Well, we got a hold of the bank and showed them the payback. So that was one thing. In regards to time, we have not hired more people, so that was a matter of priority. When we can see the benefits it gets a higher priority.

Q: Were there any problems you had anticipated and could prevent from developing?

A: No, there were no problems, because I never see them. That is my general view on life. And as I recall it there were none.

Q: What were the elements that contributed in the process?

A: The fact that there were project managers, and we had good support from Waste to Resource. I remember an interview from TV2 Lorry a Saturday morning, when me and someone from Waste to Resource showed up, so that says something about their commitment.

Q: You also mentioned being willing to change?

A: Yes that is crucial, but sometimes I forget it because we have been for so long. And I would say that is why we have a very successful company. Because our employees are willing to change. When I meet companies who are not - I think to myself well that is why they are where they are.

Q: Were there any elements that you knew would benefit the process and thus tried to promote?

A: No, those questions are difficult for me, because I do not see anything being difficult, and my employees do not see it.

Q: Have you had any clear goals on what you wanted to achieve when you entered the project?

A: No. When we began I thought either there is nothing to be improved, and we can be happy about that, and if there is were happy about that as well. So to me it was a win-win. But I was pleasantly surprised that there was so much to be improved, because that was a big success for us.

Q: You previously mentioned your goals on energy and waste, have they changed during the process?

A: No, we still want to save energy and waste. We complete our goals every year and then we set out new ones. It is only the number that changes - if it is 10% we are going to save or if it is 5%.

Q: How do you document the effect of your green business model?

A: Well, we do that every year. We have a green accounting system, and we also have weekly KPI's. In terms of waste, we can measure the amount, so that was easily measured. And in regards to electricity we measure it once a year, and then we can compare it to the previous year.

Appendix D - Interview with Frank from Focused Value Chain Collaboration

Q: What can you tell me about Focused Value Chain Collaboration?

A: It is a three-year project, which has been initiated by Region Central Denmark, when they had a department for promoting business, which ended by the end of 2018 as a political decision. And it is a part of a series of Rethink Business projects, as they were named, which began in 2012, and Focused Value Chain Collaboration is the third project in the line of Rethink Business projects, who are all under the same umbrella, with the purpose of promoting green transition. In this context green transition means to promote, introduce and accelerate circular economy in SME's in Region Midtjylland.

Q: Why did the companies want to be a part of Focused Value Chain Collaboration, in your experience?

A: When you talk about companies you have to divide them up in two major groups: Those who have a certain familiarity with circular economy, and those who have no knowledge of it. In fact there are several other groups as 'steps on a circular economy ladder'-model, but the two categories represent the opposites. We spent a lot of time recruiting in the beginning, because the knowledge-base was very small. It seemed confusing for the companies in terms of what they stood to gain. Sustainability and circular economy were sort of same-same for the companies, and it was mostly about environmental parameters. And that was probably a natural thing for our projects, given that we had a close collaboration with Annette Hastrup from Cradle to Cradle Denmark, and we have used or we are inspired by the Cradle to Cradle approach in our project, by developing resource-profiles and roadmaps, so in that sense the environmental focus was very strong. But we had to spend most of the time making the companies understand the business potentials of it as well. I will not say it is like that anymore, but it very much depends on the profession. Here in 2019 it is more about how to do it. Because most of them know that if they do not get involved with it, they will get hit by the tsunami from one way or another, by something they have to pay attention to.

Q: What was the motivating factor for companies wanting to join the project?

A: Overall it was what is in it for me? What do I get from it as a company? How can it improve my business and our business identity, because that is also an important aspect. So that was the overall focus of the companies, which they still have. They are less concerned with the network approach in Focused Value Chain Collaboration. In other projects we have experienced a good synergy in the network, but the companies have not necessarily prioritized the collaborative learning process in the project.

Q: So the main focus from the companies was, what do we get out of it?

A: Yes, exactly. And we also made a big deal out of explaining that depending on their particular circumstances, they would get a basis for specific implementation. So they would have a solid foundation in the shape of assessments, knowledge, networks and so on with at basic understanding of circular economy in the beginning. So they would be equipped to get started.

Q: What about joining the project because it is a good cause, how did the companies relate to that?

A: Well, I cannot say all of the companies, but most of them join these kinds of projects in order to be able to document that they do something sustainable, which can take the shape of a certificate or an overview of their resource flow known as a resource profile. The companies get a degree of knowledge and documentation by participating in the project, which is important for them to brand themselves and communicate about sustainability. They know that. The challenge then becomes all of those companies, who brand themselves as sustainable, which may not live up to it. But that is a discussion for another time.

Q: How would you describe the overall process for the companies who were a part of the project?

A: The first part is preparing the team, where you recruit and communicate, to get the companies to sign up for it. In Focused Value Chain Collaboration, they just had to say yes, and we would screen them, and then we evaluated the screened companies. We have since changed that to an actual application, so that we have some data and knowledge about the company before doing the screening. Because some of them drop out already at that point. But that is also because the amount of interested companies have increased. Back then you could discuss whether we used a funnel or a pipe in recruiting companies, because initially there was a lack of interested companies. So in our previous Rethink Business project Design for Disassembly we could barely assemble 9 companies for that particular project. But in regards to your question, when working on structure fund projects from EU, there is a lot of formality, and that has not decreased. So the initial steps to selecting the right companies, and then selecting consultants, is a phase in itself - just assembling the team. And then you are sort of rolling, we held a kick-off day, and in the beginning we made a big deal out of sharing knowledge in a form of teaching setup, explaining what circular economy is or what the potentials are for you. And that could be anything from external presentations to exercises to business cases, where a company from a previous project would talk about their experiences, so it would be a company talking to companies. So the kick-off day was important, that is where you start registering hours, and then the project is off. The next phase is the resource-profile, which is the mapping of the company on various parameters, and the roadmap with sub-strategies, saying where do you want to be in 10 years, and what do you have to do to get there. It has been a very important tool.

Q: So you set out a goal, and then look at how to get there?

A: If I were a consultant, that is how I would go about it. You do not really see the pattern before you sit with the roadmap looking at the future. And it is in that exercise that some companies figure out, that they do not actually have a strategy, which is a beginning in itself, and some may have done something. So it is a dynamic tool to use during the project. And I am not saying they should do it from day one - defining their vision, but if you want to be visionary and innovative for the next 10 years, what is your goal then, and how do you get there. It would typically be 100% positive Cradle to Cradle goals or something inspired of that mindset. Like how do we get this product to be 100% chemically sustainable or how do we make a take-back system that works 100%, or whatever the goal may be.

Q: So you set up specific goals?

A: Yes the company does along with the consultant in using the roadmap, but only where it makes sense. Because it is very different companies that have been involved. The roadmap can also be used to set up a communication or branding strategy. So you can use it to get specific. And like I said it is a dynamic tool, and companies like Troldekt has put their roadmap online. And I think it is inspiring for other companies to see it, because they adjust it regularly. I always use it as an example, because a roadmap can contain relatively classified information, that you may not be ready to share, but some are. And in the spirit of circular you should be able to share. Not to say that you should share your most deep business secrets. Some companies are just more open than others. Like if you look at the 17th. SDG about networks and partnerships - together we are able to go a lot further. And you do not have to do everything by yourself as a company, which is something that a lot of companies learn.

In the next phase you begin to develop your business model. That can be through business model canvas or something similar as a tool or method. And that was something we was very active about with our first group in the project, meaning that we as operators were a part of what we called the interdisciplinary team, where we with companies and consultants would have a workshop. However, that was later evaluated to be a bit problematic in regards to the work of the consultants, because it could be perceived as us interfering. So in the following group we sort of stepped back, and went from being co-experts to being facilitators, and let the consultants do their part.

Once the business model has been developed, or several of the possible paths have been uncovered, and they decide which one to take. We used to base this on business model canvas, but that was a bit difficult to translate, so we developed a more rigid template that would describe the business model that included the implementation and the future progress. And then the consulting is completed by a business case they develop and present.

Q: What were your considerations in regards to implementing the green business models?

A: Well, that is where we formally - we do not really have any actual influence in regards to how it is executed. Because that is where we let go of the project. So the development of the launchpad ends here. We just have to hope that the management and the company have

evolved and gotten a lot of insight in the importance of implementing this, in stead of just ending up like a good idea for sometime in the future and ends up in a drawer. During the time of the project you have to draw as much attention to it as possible in the company as an organization. So that it is not just something someone is working on without making it to the agenda of the management and communicate about it internally or inside the company. Of course some of the companies are rather small so there is a different flow of communication. But sometimes I have experienced that there is quite far between management and the ground-level employee, who really wants to do this. In that case implementation or communication of the circular economy mindset is most likely to fail.

Q: So upon delivering the business model, do you focus on making it appeal to implementation?

A: Yes, the business model should definitely be so clear, that you commit right away. But unfortunately everything can happen in a company with daily management and economy and priorities and so on. And I will say that optimal use of resources should be a natural part of the mindset in most managers today.

Q: What were the most common problems and barriers that you encountered during the project in regards to the companies?

A: The difficulty of getting an overview of your own value chain, and influence thereof. Is there a supplier that you have to coach and get into the mindset, or do you have to switch suppliers. I think time is also a classic factor, and getting enough time and focus from the companies to get involved. The faster and better you can get it through your organization, the easier you can break down the barriers that may exist. But that is the everyday of a company with daily management and development, and getting them to understand this is about your future survival as a company. You need to think long term and focus on this. I have not been equally involved with all the companies but some of them have definitely been more interested in their value chain than others. And that was also why we developed a value chain game for the first group, where the companies could map out their value chain and understand the challenges or at least understand the specifics. With the second group the commitment was also not at an optimal level, when I called for having two meetings, the sign-up was not overwhelming. They were able to work on their own business model, but sharing in a community, and looking for potential value chain collaboration was not prioritized by some. It can be difficult for an operator to make the companies understand the importance of sharing knowledge, but circular economy projects started up later shows, that network can be successful if they are operated by the companies themselves.

Q: Have there been any problems that you anticipated, and thus tried to avoid?

A: Well it comes back to getting the companies involved with the project. Network-generating activities has been the most difficult part. Our offer competes with their everyday and daily

management. And they have not always been able to see the importance of generating relations and sharing with others.

Q: So did you then try to promote their commitment to make the project succeed?

A: Yes, exactly. And then there is the relation with the consultants, which I found to be good and beneficial. And that is why we were extra careful not to meddle too much in their work in the second group. But sometimes I felt that we lost touch with the company, because I ended up communicating more with the consultant in the process. And that is something you could change in the future, finding the balance between being in the centre and on the sideline as an operator. Perhaps it becomes too confusing for some companies in regards to their commitment. If they have a good partnership with the consultant, then perhaps they find it less relevant to be in the project also. But that is our role as operators - to get everyone onboard the circular journey.

Q: What were the elements that contributed in the process of the project?

A: I think that the project has had a unique opportunity by having the benefit of hiring external evaluators, who followed the project, and also had meetings with us and the operators, and also had ongoing contact with the companies and interviewed them and gathered knowledge. That has been very valuable. And also the adaptability of the companies, which companies can we move the most. If you ask the Danish Business Authority today in 2019, they would likely say that we should primarily focus on companies, who have no knowledge of circular economy. But on the other hand it also makes sense to involve companies that are working with it and who can inspire the others. It is like a classroom. A good classroom in Denmark is made up of people at different levels and different skills, but together they can contribute to each other. The positive aspect is that the experience and knowledge has been picked up externally, because it is extremely important next time we work on a project. The field is so new with circular economy, and there is not a lot of data to work on. Everybody talks about it, but we have to agree and set up a framework, so that we can measure and benchmark it based on common standards. Another good aspect was that you could change directions as the project progressed and try and shape it in a way that suited the companies from the second group compared to the first group. So you do not just do business as usual. It is a good experience to know what works and what does not.

Q: What were the most important elements in making the project succeed?

A: Other than all of the tools we have used and developed, I will say the learning part of it and changing the mindset. To develop the organization and help it grow, and to create a new joint project in some organizations, where various departments have to begin working together or two partners with different attitudes who achieve the good compromise towards the good goals.

Q: How do you plan on documenting the effects of the green business models?

A: Well the effect in itself lies in the project. Everything is described in the business case, which works as a template for getting started.

Appendix E - Interview with Anne-Sofie from Sustainable Bottom Lines

Q: What can you tell me about Sustainable Bottom Lines?

A: Sustainable Bottom Lines is a Regional Fund-project within Priority-axis 3. It is a collaboration between Gate 21, municipalities and knowledge-partners, which takes place in Region Hovedstaden, where we have had the opportunity to work with 100 SME's, in all types of professions.

Q: So you worked on these green business models?

A: Well I would prefer to call them green business plans, because they end up with a plan for moving forward.

Q: What made the companies want to be a part of the project in your opinion?

A: It was very different depending on the approaches from the various companies. Obviously not all the companies are in the same place, and some are very passionate about sustainability and considers it to a natural thing to join such a project and they view the opportunity for consulting support as a good foundation for moving forward. For some of the companies it is difficult to do it by themselves, and so they need sparing. There are also those who are thinking in brand new ways in regards to green business development, and they find it interesting to look into. There is also a group views it as a strategy to get ahead on the market by seeing the competitive advantages in offering a greener product or being certified or being optimized in other processes, so that they can show outwards that they are working with sustainability and green transition. So it is very different depending on where the companies are at, and what drives them to participate in a project like this.

Q: What were the general considerations from the companies in regards to joining the project?

A: When working with SME's time is a precious resource, and it can be difficult to find the time to participate in a project. So we had to make it easy and accessible for the companies - holding their hands during the process. Many of the people we have met with are directors, and of course they have a lot of different assignments to solve as well, and it can be difficult to find the time to participate in a workshop in a busy schedule. And I will also say that it has been a maturing-journey for many of the companies. And to break it down to smaller steps by looking at their energy or mapping their materials has been an easier approach than to discuss green business models, because that is a big subject and it seems very resource-heavy to work with. So breaking it down to smaller steps has been a good way of starting out for the companies?

Q: Could you elaborate on that?

A: Well, for example by performing an energy-check we give them the opportunity to map-out their consumption and where are the potentials for saving energy. Where are the low-hanging fruits and what needs to be done to become more green.

Q: How would you describe the overall process for the companies who have been a part of your project?

A: The municipalities were in charge of recruiting the companies, and they are the ones who support the process, where they begin by offering a screening to the companies in order to determine the potentials for the individual companies to work on. Afterwards you locate the potential that the companies want to work on, and then you develop a description of the assignment for consultants to work on. That ends up with a report, that should take point of departure in the need of the company, and rather than just looking on potentials, we also look at implementation, because it should not just end up being a report for the drawer. We need to ensure that they are interested in working with it further.

Q: Could you elaborate further on the different phases that the companies go through?

A: It is very individual for the companies. We have taken point of departure in their current situation. We worked from a red-yellow-green strategy to rate them in terms of the green agenda. Is it a company that has never worked with it, there is one process. If they are in the yellow or green segment there is a second and a third process. So it is difficult to say how it has been. Some have just wanted to get an overview and find their potentials, like plastic packaging or a new technology to save resources. And for other companies it has been a longer process where they have gone from one process to another because they have wanted to go deeper in their company and look into what they could do. So it is difficult to give a recipe on our approach, because it has differed based on the individual company.

Q: You mentioned implementation, what were your considerations in that aspect?

A: We wanted to come as close to the needs of the individual company as possible. The frame of the project is to look for potentials, so we have not worked with implementation, otherwise the project would probably have looked a little different. So we have worked a lot on finding the potentials. But of course it should not end up with something that the companies will never go through with. So we have looked at what type of company are we dealing with and what are their potentials. Some initiatives might be a huge undertaking for small companies, whereas it might work for others.

Q: So you have not worked directly with implementation but you still wanted to make sure that the companies could use the recommendations?

A: Yes, and in some cases we have also had elements of it, for example we had a consultant join a staff-meeting concerning a menu-change, where they looked at what is the necessary trans-

formation and how do we do it. So if it was not just about a specific technology that needed to be implemented, but it was more about integrating it in the entire organization then we would look into that as well. I will also say that in our work-shops we also discussed how to move forward based on the information you have received, and how can you use it once you bring it back to the company. But it has been a secondary focus, which we did not work on that much.

Q: You previously mentioned that you would prefer to call it a green business plan rather than a green business model, could you elaborate on that?

A: Well to me the green business model it is about re-structuring an entire company in order to offer new services or whatnot, like leasing or prolonging the lifespan of a product, which we have only partially worked on. But what the companies end up with is more an uncovering of potentials, what are the potential collaborations that are needed, and what are the priorities in regards to action - how do we move on from here. So I find it a bit misplaced to say that we have developed green business models, rather than plans for a model.

Q: What were the most common problems and barriers you encountered during the projects?

A: Well, it was probably time, at the SME's. In order to map-out resources in particular, like a flow of resources, it requires a lot from the company in finding the data. And that was a challenge to some companies to find the data to the project and the consultants. It was a bit of a barrier. Not one that we could not forego, but it was a challenge.

Q: How did you handle that challenge?

A: Well, it is about having an ongoing contact with the companies saying, that if we need to move forward we need this data. And then we would assign someone, either a consultant or someone from Gate21 or the process-responsible, to look into the data and make sure we got it. And there have been a few occasions where we had to accept that we could not get the data within the given frame. Then we had to do something else with that company.

Q: Were there any problems that you had anticipated and thereby tried to avoid?

A: We made sure not to have too much mandatory for the companies. We have not made a long structured workshop over several days, because we know from experience that we do not get anybody onboard that way. And it has not been projects that included several companies in one group, it was individual tailored processes, and that does not fit well with a longer workshop for example. It has only been shorter workshop over a few hours, and they were not mandatory. They were made as an option for matchmaking, networking and gathering knowledge like plastic or new regulations and whatnot. It could also be about certification, because that is a bit of a jungle, knowing which certifications makes sense for the different types of companies - what makes sense for a production company and what makes sense for a service company.

Q: You say that you kept the workshops short and non-mandatory, was that to free up the companies in regards to time, or was it more because you did not think that all companies would benefit from them?

A: Well of course, when we make an arrangement on electric not everybody have an interest in it. But we tried to make the pallet as broad as possible, so that everybody could benefit, but in the end we work with the entire Region Hovedstaden and to a small company that is located far from the workshop it can be difficult to find the time to join.

Q: What were the most common problems that you encountered during the project?

A: Time and resources. That was the factors that we dealt with the most. And also the market is much more mature now to discuss green business models than it were three years ago, so I will say that it is easier to recruit companies today, because it is so high on the agenda, including the political. There are also more ways to approach it - the SDG's are an excellent way to communicate this to the companies. 100 companies is a lot and at the beginning of the project, before we had any cases to present, it was difficult to recruit. But once the cases began to come in and the project began to develop it became easier.

Q: How did you experience the motivation from the companies?

A: It was fluctuating. But given that we broke it down to smaller pieces they became more interested, that is also why I call it a maturing-journey, because once they get a bite of the project a lot of the move forward, unless we are talking about very small companies who are already saving a lot on their resources. It is difficult for them to see how they fit in it. But with the larger companies - once they have taken one step, they move on to the second.

Q: What were the elements that contributed in the process of the project?

A: I think that the companies that joined the network-arrangements have gone home with a completely different ballast. After the project they have made agreements with each other on possibly working together in the future. That was very positive - that we did not just deliver a product, but that they themselves were enthused about driving it forward. They could work together on value-chains or try and make sure that their waste-materials were recycled somewhere.

Q: Were there any elements that you knew would benefit the process with the companies and thus tried to promote?

A: Well, the more the company is guided the further they get and the more value they get from the project. Of course if a partner just meets with the company a couple of times we have a limited influence on the company to do something different. So the more guidance the better. Also just with tiny gestures like asking how it is going - can we help with anything - always pay

attention to how you can guide the company that helps. We have spent a lot of time figuring out how to support the partners of the project to help guiding the companies.

Q: What were the most important elements in making the projects a success?

A: A close collaboration with the companies, and meeting them where they are. And to always follow their process, and contribute where you can. Many of them do not know a lot about the field so there is a lot of knowledge sharing. It was also good to keep encouraging the companies to participate and be active, because they feel like a part of something. But of course we have also have companies who have worked very individually, and have gotten a very good output from the project, without being very involved. But that is also because they were already in the mindset.

Q: Can you describe any tendencies depending on the mindset of the companies?

A: No, I think because of the way we approached it we lifted a lot of the red companies into the green by breaking it down to smaller steps and always view it as a journey for them. We do not just do a quick fix and then we have a green business model - it is small steps and we are not finished after three years - I do not believe that to be the case. The technological development is so fast, so there will always be new elements that are important to include and work on for a company. But planting a mindset that makes them interested in working in this way - and always be curious about their overall development. That has been a big area of focus, and we spent a lot of time cultivating that in the project. I think that you have to keep a hold of that mindset because you can achieve a lot during a project, but it is not the final destination.

Q: How do you plan on documenting the effects of the green business models?

A: Well the project includes effect-goals related to materials, energy and waste. And that is how determine if we reach our goals. But because the project does not work with implementation that has not been a focus of the project.

Q: So there are no mechanisms to measure if the green business models actually leads to reduced environmental impacts?

A: No, there is not. Because it is a potential-project we do not have that link. We let go of the companies where they have the finished business plan. And we do not go further. Some of them we have had a running contact with because they were very committed and wanted to know if there were new projects coming, so we have been in contact with them, but we do not have a system for measuring.

Q: Have you had any clear goals for what the companies were to achieve?

A: Yes. They should end up with a business plan, a business case and a prioritized-action plan. That were the three things they should end up with. And of course there had to be some measurable effects in terms of energy or resources.

Q: So once the companies were screened, the potentials were identified and then you selected a series of goals and delivered a plan on how to achieve them?

A: Yes, well the consultants did.

Q: Have you experienced that the goals have changed during the process of the projects?

A: Yes I have. Some thought they would just join a process and then be on their way. But then they ended up saying: well perhaps we should think differently. For example if you started in the wrong place saying: we would like to look into waste. And then they discovered that they wanted to get certified instead. So they have involved the entire organization, rather than just focusing on a single element. We did not really experience any companies changing the other way around by backing out.

Q: Have you known what steps to take to reach the specific goals for the companies?

A: Yes, and in cases where we did not know we would involve DTU and Aalborg University to support the work of finding the potentials and describing the work of the consultant. And in some cases we also had students send out to the companies to work further on areas, which the consultant has believed to be good for the company to work on further.

Appendix F - Interview with Thomas from Waste to Resource

Q: What can you tell me about Waste to Resource?

A: Well it was six municipalities and Symbiosis Center Denmark and DTU. And Symbiosis Center Denmark is managed by the municipality of Kalundborg. So Symbiosis Center Denmark consists of a lot of projects, that works like an umbrella. When we met with the companies based on our questionnaires we could assess if there were potential for circular economy and resource optimization, we could give them two plans - a technical plan for development, with 35.000 DKK in consulting worth of consulting hours, and 25.000 DKK to develop a green business model. The companies did not have to register hours or pay for anything, so that was quite unique for this project.

Q: What were the reasons for the companies wanting to join the project in your opinion?

A: Well, there are two aspects. There are those who want to save money, and then there are the ones who want to have a green profile. And you can say those two go hand in hand. Most SME's do not launch initiatives unless there is a sensible payback. Most companies want to have a green profile they can use in their marketing, while it also makes sense in terms of economy and competition, which makes them even stronger on the market.

Q: So it was a mix of doing the right thing and making money off of it?

A: Yes. And some big companies might say we do it for free, but if there were no money to be gained they would probably not do it. That is my thesis. When we meet SME's they are very explicit about it having a sensible payback.

Q: But the moral aspect also plays a role?

A: Absolutely. You can say some have changed their routines to being more time consuming, which has not had an economic potential, but they have done it for the sake of the environment. There is no doubt about that. And when you begin to speak to the companies about this, they start to change their mindset and behavior. They begin to think more about things. So that is also an important aspect of this. When you are out talking to the companies you put this on the agenda.

Q: So when talking to the companies you have experienced a change in their mindset?

A: Absolutely, when we meet with them and do an assessment, where they may end up with a technical plan or a green business model, or if we are just talking. And of course it has been even more obvious with the companies where we have followed up with a consultant and made a plan and we have worked more with the company. Because what happens is that they become aware of their numbers, they gather all their consumption data, and most of them have to look

for them. So they may not have an overview of how much energy they are spending, so we provide the overview by sitting down with them and looking at the numbers. If a company is doing well they may not think about how much electricity they are spending. So it provides an overview for the company, and it provides a mindset of being aware of how you spend your resources. And I think that is an important lesson in this process.

Q: What were the overall considerations from the companies in joining the project?

A: Well the only consideration was if they had the time to be a part of it. We did a screening and if we saw a potential they could receive up to 60.000 DKK in consulting funding. So the ones who said no thank you, were the ones who did not have the time. But it is an important factor in SME's because they are busy as ever.

Q: So you have not experienced any resistance towards shifting to a green business model?

A: No, not at all. Some companies have said that in regards to their customer base the green profile is not very important, and that can be in different parts of the world. If your main client is located in a place where it is not an important part of the agenda. But then we look into the moral aspects, and of course they also want to save some money to become more competitive.

Q: How would you describe the overall process of the companies involved with the project?

A: Together with the six municipalities and DTU we developed the screening tool, and every municipality had to figure out which companies in their districts made sense to pay a visit. And then we contacted them. We were a part of almost all the screenings. Then we generated a screening-report based on the data, which we sent to the companies. Then we met and decided on who to offer a technical development plan and who to offer a green business model. Once they were assigned we informed the companies, and then the plans had to be put in a call for tenders, and we developed a standard material which had to be filled out. Initially the idea was for the companies to do it themselves, but that moved very slowly, so we helped them with it. But it is important to note that it was up to the companies who the material should be sent to. So we had a talk with the companies on which consultants they would like to bid on the offers, and then we sent it out on behalf of the companies, if they did not do it themselves. Then they would receive two or three offers, at least two according to the rules, and then they selected the offer with the best fit, because the price was already set. Then we had an initial meeting with the consultants, where we discussed how they would solve the assignment, and also so the consultant physically could meet with the company. That was important, so they could relate to what they were going to look into. Then they developed the plans. Initially they were just sent out to the companies, but later on we made it a requirement that they had to have a meeting with the company and run through the plan. It was actually one of the more ambitious consultants who initiated it, by wanting to have a meeting and go over the report, and quality test it, and perhaps make some later adjustments. And therefore we made it a requirement, because it

is just completely different from receiving a report that lies in a mailbox. So the handover was very beneficial.

Q: What were your considerations in regards to implementing the green business models?

A: Our consideration was that we would do everything in our power during the project, to remove all the uncertainties for the companies in order to go on implementing. Because our involvement ended with the plan. So we wanted to do as much as possible in order to provide the companies with a solid foundation for moving on with the plan. So if there was a good business model they would simply not be able to afford not doing it. So we spent a lot of time quality checking the plans from the consultants, we spent a lot of time on getting the right content and quality. So we spent a lot of time reading reports and making sure they were adjusted, so that there would not be a semi-finished foundation for decision-making. There was rarely a report that we did not have any comments for.

Q: What were the most common problems and barriers you encountered during the projects?

A: Well one of them was that the companies were too busy to participate, and they did not have the resources to dedicate someone to work with it, even though they only had to spend a limited time compared to what they stood to gain. That has been the biggest challenge. It was also challenging with the plans that were put in a call for tenders, they were simply too small economically for the consultants wanting to launch a project. But it helped a lot when we joined the two types of plans whenever both had to be put in a call for tenders. The quality of the plans from the consultants was also a challenge, that we had to spend so much time in adjusting them to be up to standards. We had not expected spending that much time on reviewing the quality.

Q: What about the companies what problems and barriers did you encounter there?

A: Well it is this SME-everyday with finding the time to have a meeting and also some of them said yes to a plan, but then for whatever reason like illness or whatever, had to say no to everything that was not part of the daily operation.

Q: What were the elements that contributed in the process of the project?

A: I think we were good at making adjustments in transit. Meaning that we had four periods that we worked over. And if we could see something causing a problem like when we put two plans in two separate call for tenders, we adjusted that by saying if a company were fit for being offered both plans they would still be placed in the same call for tenders. So we used our experiences, because we had to do the processes several times over. So we could take our experiences from previous periods and then make adjustments. One of the challenges was also that some of the companies broke off the project after having being offered a plan due to lack of internal resources. And that made us make more agreements in case someone left the project,

which would otherwise have made it difficult for us to reach out internal goals of 50 technical plans and 40 green business models.

Q: What about the attitude of the employees at the different companies how did that affect the process?

A: A good example was a larger SME, where the entire management with four directors. Through the questions of our screening tool, we found that the management did not agree with each other. Some thought it was very important for the company to talk about a green transition and sustainability, and another could not see why they should spend time on it at all. And once the meeting was over they had sort of agreed that it probably was rather important for their company. So asking these question and seeing the management unite behind this green transition, that was very interesting. And once we left the meeting they all agreed that this was the right direction for the company. And we often see this. We might come up with some suggestions, which they then implement. But if the mindset of the organization, the management and the employees is right, then you can really begin to move something.

Q: How was the companies equipped in terms of resources to implement the plans that were delivered to them?

A: In most cases i believe they were. There can be some challenges in regards to making investments. And not everybody was able to do so. One of the cool things by working with SME's is that you often work with the managers, and the decision-making process can be quite short. For example at one of the companies the director said, once he had been handed the report, well we will go order this, because we cannot afford not to. So there are several cases where you can actually see that they act. And then there are some cases where the payback is too long, or perhaps a company have few resources to invest, but what was interesting was that one of the more progressive consultants included the offers that were the foundation of his report, and one example was that rather than having the company tie up all their liquidity in LED lights, they would in stead lease them, so that they were still able to focus on their core business without having any debt.

Q: Was there any elements that you knew would be beneficial for the process and thus tried to promote?

A: One of the practical things were that we made sure to communicate that they could use their energy-savings to support the implementation, so we made sure that the consultants would mention it and include it in the payback. Because that is not something that you necessarily remember to include if you are not used to working with energy-savings. So if you have a payback period of ten years, then perhaps it is only nine years when you sell your energy-savings. So that was important to include to facilitate further implementation. Also to ensure that the payback was as realistic as possible. We found a really bad mistake, where the payback was estimated to be ten years, and it actually turned out to be just one year. So that was something we

made sure to look out for because that kind of mistake could mean that the project would not become a reality. If most companies are told that the payback time is one year, they will go with it.

Q: What were the most important elements in making the projects succeed at the companies?

Question from Thomas: Do you mean implementing the findings of the reports at the companies?

Answer from interviewer: Yes.

A: Well the most important aspect is that there is a good foundation for making a decision. And there can be a lot of aspects that causes the companies to do it or not. It could be the liquidity for example. So in the end it is important to have a good foundation for making a decision, and provide them with an overview on where to act and invest. When you talk to the SME's most of them have an idea of where to look, but they do not know where to begin and they do not know which solutions are most profitable. So the overview of where to begin and knowing the payback is important.

Q: How do you follow up on the effects of the the green business models?

A: Unfortunately that is not a part of the project. So the project ends where we deliver the report.

Q: Have you had clear goals for what the companies were to achieve through the green business models?

A: Well we have had some collective goals in regards to savings. So we as a project had some collective goals to achieve.

Q: What about the individual companies, did you have any specific goals for their savings?

A: No, we had the collective goals, so that when we gathered all of our reports, we had to have reached a certain set of goals. For example this much water savings and this much energy savings. So when the consultants assess the companies they look at where to find the savings. We did not have any specific goals for the individual companies. We came out to them with open minds, saying that here and here there could be some potential savings. And we also estimated how adaptable the companies were. And then the consultants would begin and they could say that this is very good I have found these savings with four years of payback, or they could say that this already works well, and it is difficult to optimize. But then the companies have also gotten some new knowledge in where to use their money.

Appendix G - Interview with Stefan - Learning-Consultant

Q: How are you involved with the companies under the Focused Value Chain Collaboration project?

A: I was associated as a learning-consultant for Lifestyle Design Cluster and Region Midtjylland to figure out if the programs launched by the region and executed by Lifestyle Design Cluster, if they worked as intended. And in that regard I visit the companies and participate in the collective arrangements. I also send surveys to them and gather data in different ways from the companies in order to learn how they currently operate and how their participation in a given project affect their way of operating.

Q: In your experience, what made the companies want to shift to a green business model?

A: It is very different, and that points to a central problem in these efforts, because the recruitment is lacking, meaning that you include all kinds of companies who does not benefit significantly. That can be because they are already circular - it is a part of their DNA. So there are a lot of companies who are already circular in their DNA, and they do not really need help to be circular, they just need help developing their business. But either consultants know them because they have been involved in previous projects, and the consultants think, if you join this program we could work further on your business development and get fundings for it. Or the operators know them because they have been involved in previous projects and say we can continue working with you in this project. So there is a group of companies who apply for the programs without wanting to become circular, rather than to succeed in their circular business. And someone like Lifestyle Design Cluster want to include them because that gives them some good cases, but they are not changed by the project. Of course they may add something new to their business or develop further on something, but basically there is no difference. Then there is a group of companies who join these programs because they consider themselves green in a different way. For example there was a company that makes small windmills for houses or a company that makes food from seaweed - none of them want to be circular, they have no interest in changing their production or their product. They simply believe that the world would be a greener place if their products were more widespread. So if there were more housing-windmills, and especially in the third world where electricity is made by a diesel generator, it is true that it would be better if it were made by a windmill, but basically in this case it is just a slightly suffering company. It is the fourth time I have encountered them in a project, and they believe they have a super product, that they would like to succeed in selling. So there is a group of companies that applies for these kinds of projects in order to get help in developing their business, but they have no desire to become more circular. Then there is a group of companies who think this might be something for us. It could be a carpenter-business where the son is about to take over the dad's company, and thinks perhaps we should look into this thinking green idea. Or it could be someone who makes water-beds which is not an environmentally friendly product, but they say perhaps we could make the plastic tarp with less phthalates in it, which softens the plastic and is really bad. So perhaps they join in order to say that their product is a bit more environmentally friendly. And then there are companies like Troldekt, which

is a company that joined and thought, our product is already circular - it consists of pressed wooden-fibers and chalk, so that is very sustainable and it can be reused and so on, we just never spoke up about it. So they have not changed a damn thing in their products, they have used the project to having them certified. So they have also made their way into the projects and gotten a Cradle to Cradle certification and gotten to know them, and use it in their marketing. But they have not wanted to changed their product. So just to make you understand that when making projects like these, there are all different kinds of companies who apply. When making projects like these we think, there are these companies who are not circular, and then they join a project to learn how to become more circular. And those companies are also out there, just so that I am not talking it down, but there are lots of others. I can also mention a tiny bed and breakfast south of Odder, who wanted to make a very green bed and breakfast, and that is all well and good, but there are no resource-flows in a bed and breakfast. And furthermore it is far out in the middle of nowhere I do not see how a guest would ever come by, so that would never make a difference. Or also an architect firm in Skive who found this to be very interesting, but there are no resource-flows in an architect firm - they council other on how to build houses. So it is a very broad palette of companies who apply for projects like this, and when I tell you this long story it is to give a more nuanced view of things but also to tell you that the motivation of the companies is very different.

There are also companies who want to do it because they believe that it is the right thing to do. Not because they are green and holy, but because some companies want to behave decent. The first wave in behaving decent was making sure that their employees had a good working environment. The second wave was to take care of the immediate environment - taking care of emissions from the company. So that is companies who basically just want to be decent, because that is a part of running a business - and this is the third wave. Now we are raising our eyes and looking beyond our own property. They are typically very careful. They are a healthy business with long-standing customer and supplier relations, but they can see that this is the way to go, and they use projects like this to test what it could be for them and what are the opportunities. So we do not see any huge effects but they test it in a single product, and look at how the market responds and so on. So that type of companies also exist, and those are actually the ones who are meant for this kind of projects.

Q: I am glad that you mentioned these types of companies because I was beginning to wonder where they were in all this?

A: Yes, they are there, but they do not make up the majority. And they are partially aware of this at Lifestyle Design Cluster. What we learned from the initial projects were that they had to ensure that the companies who join these projects also have the management onboard on the ideas. Because otherwise nothing happens. We saw that in some of the first projects - there were many who joined, but they were driven by a single enthusiastic employee, and it never got hold. So they got better at screening the companies to determine if they were right for the project. But with all of the other types of companies I mentioned, there were plenty of focus from the management, they just had no potential. So they underestimated the recruitment. It is

a battle to recruit companies, and that is why they include a lot of companies that they really should not.

Q: What were the most common problems that the companies encountered in regards to implementing green business models?

A: Again I have to answer in two ways. One thing is that it very much depends on the type of company in regards to the typology I just described, where I distinguish between four or five different types of companies. It is also very different challenges they face depending on if it is a service company or a production company - and if it is a production company with its own production or if it is a company who have their production in China. So their challenges are very different.

Q: Keep in mind that I am also interested in very general tendencies.

A: I was just given the exact same assignment, but I still answered them in the same fashion. Firstly we need to distinguish between the typology of the companies. Secondly we need to distinguish between the maturity of the companies in order to know which barriers to address. We operate with a staircase with five steps. The first step is companies just looking into it and wondering if it is for them. That could be the architect firm or the carpenter, who wonder what circular economy is all about. At the second step we find the ones who are trying it out at a small scale, and figuring out what they must change in their production or what are their new demands to their suppliers. And if they find that this is something for them - then where do they begin, what is important and what is not. On the second step they need help in mapping and prioritizing. On the third step they need help in realizing their initiatives. They often lack competences and resources to realize it. At the fourth step we work with innovation - they have to re-design their products or they have to make some more fundamental changes. On the fifth step we have an actual circular business model. And they face different barriers depending on which maturity-step they are at, and that is why I avoid your question of general barriers. But if I have to point to the most general it is that you have to have a strategic focus from the management - it has to be important. Otherwise they cannot keep focus. The companies are continually confronted with something they have to develop on. Where Lifestyle Design Cluster want the companies to join their project, the Alexandra Institute want them to work on digitalization, and a third party wants them to disrupt, and a fourth party wants them to work on internationalization. All while they have their own development projects. A typical company often have 10-20 running development projects. So there is a huge shortage on resources for development, and for most companies development is not an isolated element. It is an integrated part of solving issues. So there are not employees who only work on development - they all do to some extent. So there is a lack of resources. And it is not just in regards to green transition that goes for all transition. That is important to remember. A lot of this relates to the companies ability to work with development and transition in general. Whether it is internationalization or digitalization, and then there is the green. When it comes to the green it is about having an overview of the environmental impacts related to a certain production of a certain product

in its life cycle. There are very few who have that overview. Is there a shortage of the resources being used? If it is textiles where are they from and how are they produced? To get a basic overview of the environmental impacts is a very big undertaking, which I would place at the second step of the staircase. But then there are some who jump in at step four, but who have to take a couple of steps down, in order to get a more basic understanding of their environmental impacts. They really need help in getting the overview and knowing what changes to make. Knowing which changes to make is the biggest challenge. Once they know that - the good companies who want to change, they are very good at executing. They need less help with that. They are used to it.

Q: What are the elements that contributed in implementing green business models?

A: There is no doubt that the consultant-funding which the companies have gotten to get an overview and to benefit from being circular, that is very important. There are some consultants who are good at it, who are good at figuring out what to focus on and how to do it, that means a lot in terms of overcoming the basic barrier. So the addition of resources, with resources meaning both knowledge and extra manpower, which they lack for allocating to such an assignment. It is often considerably more elaborate than other developing process they have been through. So the addition of resources is important, but also the basic moral orientation of wanting to do this, combined with a longterm strategic focus. Because this does not include short term payback for the companies. It takes a while, and they need to have patience. So if you get into it because you are struggling and thinks this could be a help, it might also work. But in general that is not the right motivation, because you will die before you are ready. The combination of a moral determination and a longterm strategic focus. And the third thing I will point to is to be willing to undergo development processes without knowing where you will end up.

Q: If we look at the companies who have not had a green business model, what are the arguments that have convinced them to move in that direction?

A: Well, it is simply if they can see that it is doable. They are not difficult to convince. They just need to see that it is possible. So they need help to find out how they can do it. They do not need further convincing. If they reach that point then they are willing, if they can see that it makes sense and they can run a business in that way.

Q: What about companies that are more skeptical than what you just described, have you had any experience with them?

A: Well I cannot say really. There is a very strong selection-bias. The companies I meet have already joined the project.

Q: What role does the culture of the company play in regards to implementing green business models?

A: Well it is basically development-oriented companies. It is companies who are used to work with development, who have an eye for opportunities and who are curious, and have a culture where you are always moving. And who also have a culture of being in close dialogue with suppliers and costumers, and who have a good opportunity to geed feedback in both sides of their production. They usually have long-standing relationships, which provides them with a good and confidential dialogue. And here is a selection-bias as well. It is development-oriented companies who apply for these types of programs.

Q: So there is a high level of willingness to change in these companies?

A: Yes, there is. Often with a typical jysk caution on whether or not it is possible and it makes sense, and if it does they are willing to change. They have that drive

Q: What was the role of the management in implementing green business models?

A: It is essential. If it is not there nothing will happen. They have to be driving it, and represent the strategic focus. And we figured that out already after the first project. Companies where it is not anchored in management will not be allowed to join the projects. Again I have a strong selection-bias, given that I have only worked with companies where the management wanted to do it.

Q: How did the companies assess the effects of their green business models?

A: In reality almost no companies have a green business model, other than those who began with one. So there is almost nobody who are that far along, that they can experience the effects. And that is also why I say there is a long way to an effect, it does not happen short term. There may be some, who have reduced their waste and perhaps they have also saved electricity. But sometimes the consultants warn against having that focus, because it removes focus from the innovative transition, which should be the focus. So one should be careful about focusing too much on the low hanging fruits, because you end up flying too low. But almost nobody are at a place where they can determine the effects. There is actually only one project which had that focus. It is called Sustainable Bottom Lines. They were very focused on the bottom lines, whereas the others were more focused on business development. And those things are very different. The consultants warn against focusing on the bottom line. So we over-sell, because there are far too many projects and consultants who talk about making money off it. And perhaps that is true, but we have very few examples of it if they were not green already.

Q: So by focusing too much on saving energy and materials, the fruits are simply too low hanging in regards to focusing on developing a green business model?

A: You risk that they lower their eyes rather than lifting them. And they need to lift them to understand the environmental context which their products are a part of, rather than optimizing. I think it is great that companies are optimizing, but call it energy-savings or waste-re-

duction. All companies should do that. But do not call it circular economy. Reserve circular economy to companies who want to understand how they can circulate material-streams of their production. And do not include all the others, it water down the concept and removes focus.

Q: But when a company transitions to a circular business model, are there any mechanisms that can be used to document the effects of the efforts in regards to environmental impacts?

A: I do not know of anyone who measures that. You would have to ask someone like Annette from Cradle to Cradle, who would know companies. And that would be because they have a cradle to cradle certification on a product, and that includes elements of it. But I do not know of anyone who document the environmental improvement.

Q: Do you know if it a part of the development of green business models - to install mechanisms that can monitor the reduction of environmental impacts?

A: I have not heard any mention of that. But there are probably some who do, but I do not think it is important to them. But I think it is important for them to know that they have thought things through, and perhaps there are some who would use it in their marketing. But I have not met a focus on documentation, but perhaps that is because I have not met anybody who were that far along, where it made sense to them. So I cannot really answer that.

Q: The reason I keep digging into this is because in implementation it is important to know if initiatives have the desired outcome.

A: And it is very interesting. I do a lot of project-evaluation and I meet a lot of projects that do not have a defined goal. They do not know where it ends, they just know that is the way they want to go, and they use the project to figure out what they can do. So our rational models of having a goal and knowing how to get there and we can map out a chain of effects and so on - there are plenty who have not thought to the end of the chain, but who want to get started and then take some iterative steps and see where they end up. So I do not know of that many companies who would need that kind of decision-foundation.

Q: How did you experience the qualifications of the companies in regards to implementing a green business model?

A: They often lack those, and they do not know what qualifications they need. So that is the first step - uncovering what qualifications are needed. And then we are back at the overview-exercise - it is a central element in the initial phases to be aware of the needed qualifications. And then figure out if they should be bought from a consultant and so on. So we have developed a capacity-model where we measure the abilities of the companies to work with circular transition.

Q: What about the qualifications of the management and the employees?

A: Well, there are sort of two types of qualifications. The management must have qualifications in terms of business. And first of all they must understand what type of business this (green business) is and what it can and cannot. And the management must also know, if not in details, they must understand the environmental aspects in order to relate to it. It is important to note that this way of distinguishing only applies to companies of a certain size. A lot of the companies who are involved are so small that the management and the executing employees are the same people. But in larger companies I will say that it does not typically require new qualifications for the employees. It is just a different focus. Like an organic farmer once told me. There is not much difference in operating conventional or organic. You just have to turn it upside down. Previously you would look at what type of crop you wanted - and then you figured out what to put in the field in order to succeed with that crop. Now you do the opposite when going organic. First you look at the elements in the soil, and then you figure which crops are suited. And the same applies to companies. Of course there is often specialized knowledge, but they rarely possess it and therefore they have to buy it.

Q: How did you experience the incentive for the employees to adopt the necessary changes in transitioning to a green business model?

A: I have met few employees - mostly I deal with management. But the companies where I have experienced the employees being actively involved, they have been very motivated. Again there is a selection-bias given that I have met few employees, and when I have it is because they have been super motivated and therefore made an effort.

Q: What about potential problems the employees could encounter during the transition to a green business model, how has that been handled in your experience?

A: Well I do not know much about it, because I have met too few companies who have developed an actual green business model. I do not think the employees have encountered anything. One of the companies I encountered, that made working-clothes, the biggest problem was the buttons in terms of reusing. There was metal in the fabric, like push-buttons you typically use in the health sector, and that is no good. It has to be push-buttons because there can be too many bacteria around traditional buttons. But how do you remove a push-button. A traditional button can just be cut off, and you cannot do that with a push-button, so what process do you need then. So those sorts of problems on how to design your product and the problems and so on - the employees just need to know what to do.

Q: So solving the problem would often be a job for the management?

A: Well, yeah. The employees can of course be a part of the solution, but I rarely experience someone developing a model and then encountering barriers at the employees. I have not encountered that.

Q: How did you experience the attitudes of the employees in shifting to a green business model?

A: The ones I have encountered are proud. They think it is awesome to be part of a company that wants to move forward. They want to work for it and make a positive difference. So they think it is awesome and interesting.

Q: So it fits well with their values?

A: Yes, it is attractive to be in development-oriented companies, and experience the development. I am quite certain they find that positive.