Best Practices of Environmental Front-Runners

A study investigating how and why enterprises have established an environmental leadership position

Master's thesis in Management and Economics of Innovation

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SUMMARY
Sustainability and the environmental impact of organizations have received significantly increasing attention over the last decades. The transition towards more sustainability focused business models impacts all companies but also creates opportunities to strengthen the competitiveness and the brand image by being superior in terms of sustainability performance. Sustainability, and especially environmental sustainability, has been a major focus area for academics for a long time. However, limited attention has been given on the variations between industries in terms of what factors that impacts the value creation from sustainability and the underlying rationales for being an environmental front-runner.

Therefore, the purpose of this report was to investigate industry-specific best practices for how large, environmentally leading firms have established their position as environmental front-runners. By doing so, the objective was to identify how the industries differ and what industry-specific factors that are leading to the potential differences. The purpose of the report was fulfilled by a multiple-case study where several environmentally leading companies from the automotive and life science industry were investigated. The result of the study shows that the objective for companies from both industries is to establish a competitive advantage from their environmental focus. However, the companies from the automotive industry are to a higher extent seeking financial advantages when establishing themselves as environmental front-runners. On the other hand, companies in the life science industry are to a higher extent driven by a desire to do good for the society in combination with building company resilience and attracting employees as well as business partners, and do not see the same financial benefits. It is seen that the financial performance is of great importance in the life science industry as well but compared to the automotive industry the higher purpose of the business was concluded to be a more important driver in the reasoning behind positioning the company as an environmental front-runner.

Moreover, the study shows that the way companies work with sustainability is similar between the two industries. It is concluded that the interviewed environmental front-runners have started off by focusing on integrating sustainability in the core strategy. To further improve the sustainability maturity, the focus has been to integrate sustainability into the whole company. Finally, to achieve the highest level of sustainability maturity, companies has targeted to extend the sustainability focus to also include the surrounding ecosystem and thereby focus on the value created for the whole society and not only the individual company.

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1 Introduction

Sustainability has during the last decade been a key topic throughout the world, involving all actors from the local shop around the corner to the world's largest organizations. Global warming and climate change are two of the most crucial challenges of our time resulting in major threats such as rising sea levels and extreme weather (United Nations, 2022). To counteract and direct the world's development, the members of the United Nations have adopted 17 goals for sustainable development, several of them intended to combat climate change. The battle against climate change creates challenges for all companies as the transition needs to be performed on all levels. However, the transition also creates opportunities for companies to lead the industry transformation and thereby strengthen their market position (OECD, 2019). Furthermore, according to the report, it is obvious that the role of different companies is varying, and it is stated that different strategies, e.g., having a proactive or reactive business model, need to be applied for each company to take advantage of the situation and the opportunities created in the market.

OECD (2019) argues that it is difficult to predict which companies are best positioned to seize the opportunities created and according to the report, it is claimed that different industries have different strengths and opportunities to capture. Their analysis suggests that companies in sectors that currently are having a competitive advantage, which is when a firm has the potential to earn a profit margin higher than its competitors (Grant, 2018), also tend to be environmental front-runners. Meaning that they are better suited to benefit from the transition which indicates that the environmentally leading companies likely will be acting as the driving force for the industry transition. Moreover, as sustainable development is a critical topic for the whole society it is closely monitored and supported through regulations, policies, and subsidies to limit the inherent risk and make it financially beneficial. The Center for Global Development (2021) is continuously rating countries based on their environmental performance and in their latest edition they were rating Sweden as the number one leading country closely followed by France and Portugal. With the arguments from OECD (2019) stating that environmental front-runners tend to benefit the most from the transition, it is likely that Swedish leading firms will be among the global leaders and have come far in the sustainable transition which justifies why it is beneficial to examine how the Swedish environmental front-runners have reached their position.

1.1 Background

Even though sustainability is a crucial topic for the whole society, companies differ in how actively they are working with sustainable initiatives. Kim (2018) claims that companies either can have a proactive or reactive approach where the companies with a reactive approach have the strategy of taking on minimal environmental initiatives with the rationale that by minimizing the investments in sustainability activities the overall company performance will be optimized. The author further argues that in contrast, proactive companies go beyond the mandatory actions by decreasing the environmental impact of the company. These proactive practices include increasing resource efficiency, innovative manufacturing processes, new materials, and technological innovations. The rationale behind the proactive approach is that by

optimizing the production and minimizing the waste, the costs will be minimized and thereby a superior financial performance will be achieved.

Additionally, multiple authors state that by working with sustainable initiatives in the right way, there is no trade-off between sustainable initiatives and creating financial benefits (Darnall et al., 2010; Eccles et al., 2011; Lowitt, 2011). For example, Lowitt (2011) claims that sustainability traditionally has been viewed as either a risk that needs to be accounted for or as a vehicle to express altruism as a company. The author argues that this view has resulted in a perception that sustainability is something that is being imposed by stakeholders and occurs at the expense of financial performance. However, he further states that sustainability and financial performance rather should be seen as linked which can support the growth of firms and enhance competitive differentiation. Following the arguments from Lowitt (2011), it is clear that firms can benefit from incorporating sustainability to create value through competitive differentiation. Similarly, Porter and Kramer (2019) discuss the concept of shared value as the way to simultaneously create both economic value for the company as well as value for the society by addressing sustainability issues. The authors explain that this is possible through widening the company's perspective and analyzing the whole value chain to find ways to establish synergy effects between different activities instead of optimizing each activity in isolation from other activities. This implies that the trade-off between doing good for society and achieving superior company performance is being erased and instead these concepts are benefiting from each other. The authors conclude that refocusing businesses towards the concept of creating shared value may be the next major step in the way companies design their strategic thinking.

Aligned with the arguments by Porter and Kramer (2019) and Lowitt (2011), the study by OECD (2019) concludes that the same sectors that are leading green innovations are also the ones experiencing a competitive advantage which confirms that leading companies are establishing positive side effects in terms of competitive advantages from working with sustainability initiatives. Similar effects have been identified by Darnall et al. (2010) who argue that by engaging in proactive initiatives that go beyond complying with regulatory stakeholders, better performance can be expected. Moreover, Eccles et al. (2011) show that companies that have voluntarily adopted environmental policies for a long time have proven to significantly outperform less environmentally focused firms in terms of both stock performance and accounting performance. This would then, according to their arguments, indicate that there is a correlation between long-term sustainability initiatives and superior corporate performance. According to Eccles et al. (2011), it is evident that environmentally successful firms only achieve a performance advantage if they have had a long-term focus on sustainability initiatives, meaning that short-term actions most likely will not result in a competitive advantage or any performance benefits.

However, while multiple authors claim that sustainability leading firms, possessing a proactive sustainability approach, are able to create a competitive advantage and superior financial performance, most studies are proposing general frameworks or considerations for companies when working with sustainable initiatives without considering the industry-specific factors impacting the outcome. Porter and Kramer (2019) emphasize that companies should examine the entire value chain simultaneously, including activities performed by other companies before and after the companies' focus measures, to identify suitable actions that can create both financial

and sustainable benefits, while Lowitt (2011) emphasizes the importance of company's sustainability strategy.

However, according to a study by OECD (2019), it is important to understand that different industries will have different barriers to overcome to achieve a green transition. It is also argued that some industries already have well-developed skill sets which will facilitate a green transition and it is essential for companies to understand the industry characteristics to enable them to do the transition to become an environmental front-runner. Moreover, in an earlier study by Bonini and Görner (2011), it is argued that different industries have different levers that sustainability should be directed towards to create superior value. For example, it is argued that return on capital can be a lever to which sustainability initiatives are directed to improve performance. The authors conclude that there is no general solution to how value can be created by extending a firm's sustainability focus, but rather that it is essential to understand where an industry has the biggest opportunities for value creation and direct the sustainability initiatives toward that area.

Furthermore, it is argued by Lloret (2016) that to achieve a competitive advantage of having a superior sustainability performance, a constant awareness of the value-generating conditions needs to be implemented into the business. Moreover, the authors claimed that it is of great importance to understand the unique industry standards of an industry to be able to direct the awareness to the factors that are of importance for the value generation. This implies that there is a need for an industry-specific understanding of how sustainability initiatives have been implemented in sustainability-leading firms.

Moreover, Evans et al. (2017) argue that sustainable value creation is created through having a system view, involving all the related stakeholders when making business decisions. This further strengthens the arguments of the importance of having an industry-specific understanding of how to increase firms' sustainability focus and how to initiate environmental transitions, as all industries will have a different structure when looking at the whole system.

As stated by multiple authors already 10 years ago, research suggests that sustainability initiatives lead to competitive advantage and enhanced financial performance (Darnall et al. 2010; Eccles et al., 2011; Lowitt, 2011; Porter & Kramer, 2019). A recent study made by OECD (2019) claimed similar correlations between being an environmental forerunner and reaping the benefits of an increased competitive advantage. Furthermore, Chen et al. (2020) argue that different industries have different levers for how to optimize value from sustainable initiatives. However, the research conducted has mainly focused on how sustainability creates value in a general setting (Brozovic et al., 2020; Evans et al., 2017; Lloret, 2016; Lowitt, 2011; Porter & Kramer, 2019) and not on how establishing environmental leadership differs between different industries. Therefore, this report aims to bridge this gap of the limited knowledge of industry-specific factors that impacts the transition towards establishing an environmental leadership in the life science and automotive industry.

1.2 Purpose & Research Questions

The purpose of this study is to investigate industry-specific best practices for how large environmentally leading firms have established their position as environmental front-

runners. This means that the study aims to understand how firms have established their sustainability approach to become environmental front-runners within their industry, and where best practices entail consolidating the general industry factors for the two industries that enable firms to become environmental front-runners. The results will be compiled into an industry-specific framework intended to be used as support and guidance for firms initiating a transition towards becoming environmental leaders within their industry.

To fulfill this purpose of investigating best practices and differences between how environmental leading firms in Sweden have established their positions as environmental front-runners, two research questions have been formulated. The first question regards what the driving factors behind becoming an environmental front-runner are as well as what the expected outcomes are. As the expectations might be different and thereby result in different results when implementing actions to become an environmental front-runner, it is considered to be of importance to understand the rationale behind becoming an environmental leader. Therefore, the first research question is as follows:

Why have environmental front-runners chosen to establish themselves in a position as environmental leaders in their industry?

Building upon the rationale of why companies have established environmental leadership, the second step is to understand how companies have established their position as environmental front-runners. Based on this, the second research question is as follows:

How have environmental front-runners incorporated sustainability in their business to create value from their sustainability focus?

1.3 Scope & Limitations

Several delimitations will be made to keep a focused scope of the report and to enable conclusions to be drawn from the research. Firstly, the study will only focus on the environmental leaders of the industries in scope. By only investigating the environmental leaders the analysis does not need to contain any subjective assessment of which actions actually impacted the result in a positive way, and which did not. Rather the focus of the study will be a qualitative approach explaining the best practices of the companies that have resulted in an environmentally leading position in their industry. However, it might be possible that non-leaders are having the same rationales and working the same with environmental sustainability. The target of the report will therefore not be to explain how to become an environmental leader within the life science or automotive industry, but rather to investigate how the leaders are doing to avoid having to assess the importance of any individual actions.

Secondly, the report will only include Swedish companies with a valuation exceeding 150 million euros to facilitate the comparison between the companies by both excluding the smallest companies as well as that the information available from listed companies tends to be more comprehensive and thereby enabling a more extensive analysis to be performed.

Moreover, the report will only focus on two industries and only companies within these two industries will be included. By having two different industries the target is to

distinguish how environmental leadership might be established and how different industries might have different factors that impact the transition of becoming an environmental leader.

The scope of the report will be limited to environmental sustainability and will not address other types of sustainability and how these other factors have been impacted by becoming an environmental leader. Companies are increasingly adopting the triple bottom line approach of sustainability which consists of three factors, economic, social, and environmental concerns, and the environmental limitation will therefore be based on the definition from the triple bottom line approach (Ángel Soler-Vicén et al., 2022). Based on this, the report will therefore only focus on the environmental concerns, which measure the environmental responsibility of a firm. Hall and Slaper (2011) state that the environmental factor includes the ecological footprint and the impact on the environment from a firm, i.e., the uses of natural resources, land use, and waste management. Therefore, when sustainability is mentioned in the report only the environmental parts of sustainability are considered and not any other factors although they might be a part of the general sustainability definition.

1.4 Industry Overview

The two industries that will be investigated in the report are the life science industry and the automotive industry. The definition and the scope of the two industries are presented below.

1.4.1 Life Science Industry

The life science industry is a broad industry including pharmaceuticals, biotechnology, medical device technology, biomedical technology, and several similar segments (Jordin, 2022). Jordin (2022) states that the life science industry accounted for 7,1%, or $2,6 trillion, in 2018 of the US economic activity and the industry is employing 1,87 million workers. Moreover, it is stated that the covid-19 pandemic has significantly changed the perceptions and ways of working within the life science industry and the change to remote working setups has enabled access to new workforces and new knowledge bases (Deloitte, 2022). Moreover, Deloitte (2022) concludes that the importance of sustainability within the life science industry will continue to increase, and they mention environmental sustainability as the main factor that is expected to be one of the key focus areas for the life science companies for the upcoming years. Deloitte (2022) concludes that the pandemic has created major opportunities for the life science companies to take advantage of their sustainability initiatives and to leverage it into clear business advantages if having a clear commitment to it.

1.4.2 Automotive Industry

The automotive industry has developed into one of the most important industries in Sweden and was reported to employ 120 000 people in Sweden in 2014 (Andersson et al., 2017). Andersson et al. (2017) state that the automotive industry consists of three different types of sub-segments, the motor vehicle industry, bodies for motor vehicles, and parts and consumables for motor vehicles, which means that both suppliers and original equipment manufacturers are having an important role in the industry. Furthermore, they state that the motor-vehicle industry by far is the biggest sub-segment and that it consists of the manufacturing of cars, trucks, and buses. It is stated that four main business drivers impact the automotive industry (Technofunc, 2012).

The four main drivers consist of economic drivers, consumer demands, globalization, and technological innovation and it is argued that these four business drivers are shaping the development of the automotive industry. Moreover, it is stated that sustainability is gaining increasing importance within the automotive industry, and it is confirmed that it is driven both by external regulation and increased awareness of environmental and sustainability issues within society, and a growing interest among consumers in sustainable vehicles (Jursch, 2017). Jursch (2017) further concludes that three main challenges are the basis of the automotive transition and drive sustainability initiatives. The three mentioned challenges are climate change and carbon emissions, sustainability along the value chain, and digital responsibility.

2 Literature Overview

The following chapter will present literature related to the purpose of the report to investigate the best practices and differences between how large, environmentally leading, firms in the automotive and life science industry have established their position as environmental front-runners. The literature presented will cover three main themes, see Figure 1. The first theme regards theory about environmental sustainability with the aim to present the definition of what environmental sustainability is, the current trends within the topic as well as some widely adopted and well-known models. The second theme that will be presented regards strategy in relation to sustainability to broaden the understanding of the strategic aspects of establishing a forefront sustainability approach as well as why companies engage in sustainability initiatives. The sustainability and strategy theme are also meant to bring insights into how companies efficiently can establish a sustainability approach. The final theme that will be brought up regards change management. The change management theme is included due to the fact that multiple authors such as Placet et al. (2005) state that inertia and resistance to change is a great challenge to overcome to become successful with sustainability-focused innovations, Frishammar and Parida (2019) explain that establishing sustainable circular business models may result in that a significant change is needed within the organization, and Dechant and Altman (1994) argues that one of the largest challenges to establish an environmental leadership is to manage change. Therefore, change management theories will be used to understand how to efficiently handle transformation to compare with the environmental leaders and how they have established their positions.

Figure 1
Overview of the literature presented in the literature overview
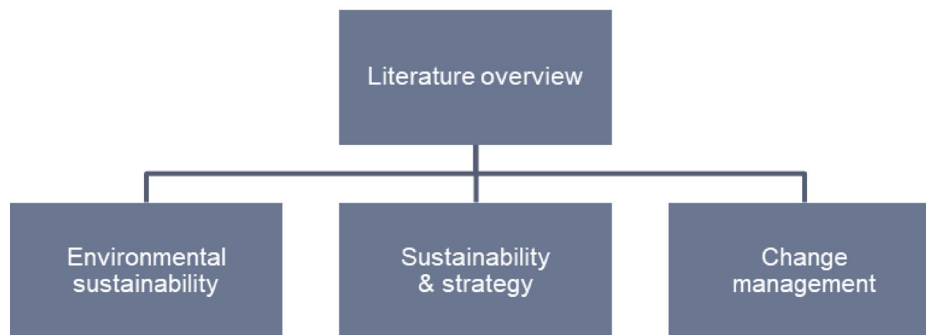
2.1 Environmental Sustainability

This chapter will consist of theories on how the concept of environmental sustainability has developed as well as the current trends. Sustainability is often defined as a combination of environmental sustainability, economic sustainability, and social sustainability. However, this report is limited to only investigate environmental sustainability and this is therefore the only concept that will be considered in the upcoming section.

2.1.1 Environmental Sustainability as a Concept

In 1987, the Brundtland report was released by the World Commission of Environment and Development (WCED) as the first attempt to introduce the concept of sustainable development. In the report, WCED has defined sustainable development as:

> *"development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (p. 31).*

This was the first pursuit against achieving a balance between societal development and environmental impact. The report was pioneering in the way it was argued that environment and development are two inseparable concepts that need to coexist in harmony with each other. Since the term was coined, it has become a paradigm character for development widely used when formulating and incorporating international treaties and national laws and constitutions (Ruggerio, 2021). Ruggerio (2021) shows that the concept and definition have been widely adopted in business development, agricultural production development, industry development, and urban development, and have created the foundation for more modern environmental development concepts, such as green economy and circular economy.

Similarly, the Environmental Kuznets curve (EKC) was developed by Simon Kuznets where it was claimed that there is a relationship between environmental degradation and income per capita, as seen in Figure 2 (Stern, 2018). The conclusions drawn by Kuznets and the basic assumption behind the EKC is that economic growth will result in decreased environmental pollution (Stern, 2004). This conclusion reached by Kuznets in combination with the claims from the Brundtland Report published by WCED (1987), that it is possible to achieve sustainability without negatively impacting the normal business, was a ground-breaking theory pathing the way for companies to initiate the transition into more sustainable and environmentally focused business models (Stern, 2004). However, during the early 2000s critique against the applicability and the underlying assumptions of the EKC has risen which paved the way for other alternative definitions and findings of sustainability and environmental development.

Figure 2
Environmental Kuznets curve
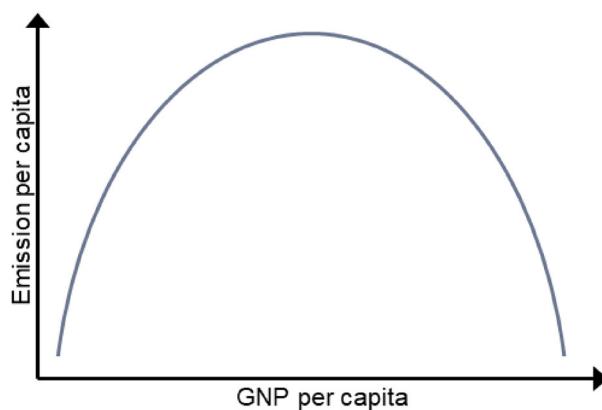
Note: Adapted from Stern (2004)

As a result, the theories by Elkington (1999) and the framework of the triple bottom line (TBL) gained ground in business accounting and the theories by Elkington were claimed to be the business imperative of the 21st century. In the definition of sustainability that was made in the framework he argued that sustainability should be broken down into three factors, economic sustainability, social sustainability, and environmental sustainability, as shown in Figure 3. These three factors are often known as the 3Ps, people, planet, and profit. The difference between the TBL approach and the general reporting approach is that the triple bottom line includes environmental and social measures and Hall and Slaper (2011) argue this reporting framework is an important tool to support and reach sustainability goals for a company. The idea behind the TBL was that firms should have three separate bottom lines and thereby measure both the traditional financial performance, but also the social responsibility, and the environmental impact of the firm. By measuring both the economic, social, and environmental impact of the firm it is claimed by Gupta et al. (2020) that the full cost of doing business can be calculated and measured showing the real impact and effects of the firm's business.

The economic, social, and environmental factors have been defined by Alhaddi (2015) who claims that combining these three factors provides a suitable framework for evaluating the performance and success of a business. The author defines the economical factor as the capability to create a long-term sustainable financial performance to survive and evolve into the future. This is closely related to optimizing the usage of resources to maximize income and minimize the costs which result in sustainable economic performance.

The social factor consists according to Alhaddi (2015) of conducting fair business practices to the labor, human capital, and the society. She states that being sustainable in a social way means that the business will provide value to the society and the value created for the society then will bring even more value to the firm. Thus, social sustainability aims to result in stable cultural and social systems.

The environmental factor, which is the factor this report is focusing on, relates to the stability of biological and physical systems according to Alhaddi (2015). The baseline for the environmental factor in sustainability is according to the author that the business should not compromise the environment and the environmental resources for future generations. Hall and Slaper (2011) further state that this factor should measure the environmental footprint of a company and the methods to improve the environmental factor should be focusing on cutting down energy consumption, optimizing land use, reducing consumption of fossil fuels, waste management, efficient logistics, and ethical use of materials.

Figure 3

The concept of the triple bottom line, where sustainability is the combination of the three areas
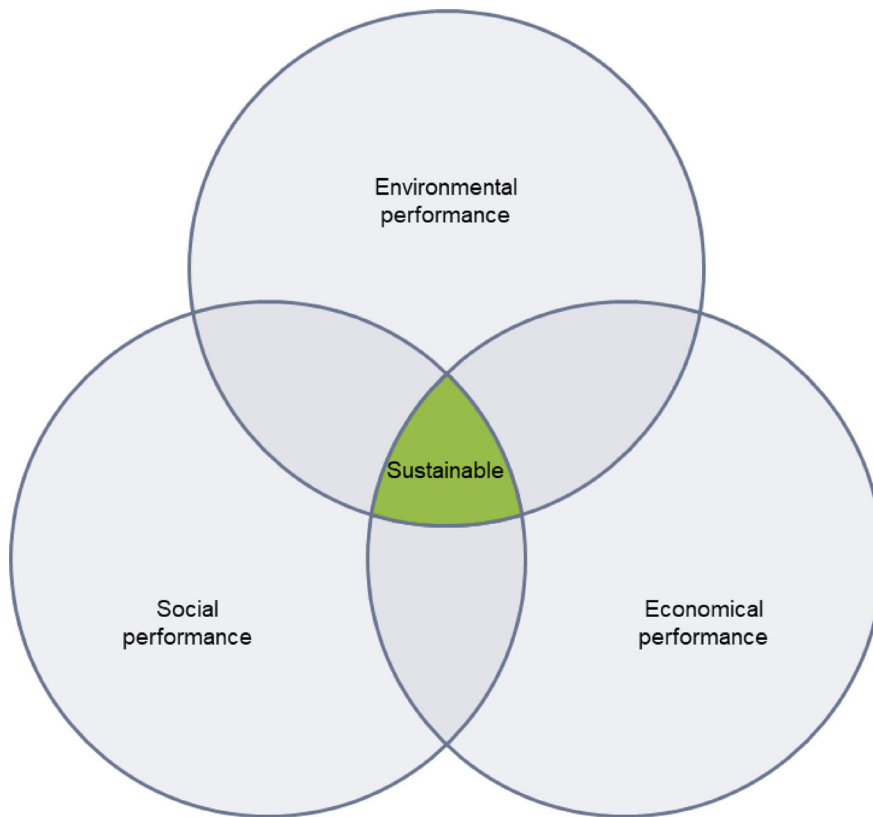
Note: Adapted from Alhaddi (2015)

A key milestone influencing the importance of corporate social responsibility (CSR) was according to Bojar et al. (2020) the publication by the European Commission in 2004 postulating that CSR has become an integral part of business management and environmental benefits are achieved by implementing CSR practices. Bojar et al. (2020) state that CSR is about conducting business in compliance with all regulations and voluntarily taking the environmental impacts of its operation into consideration. Carroll (2016) concludes that CSR can be divided into four different maturity levels, as seen in figure 4, where the more prominent firms in CSR have reached a higher level in the pyramid. He concludes that as the CSR efforts mature and develop the focus changes from a rather narrow scope only including the single firm and a reactive approach to rather taking a system perspective and focusing on the whole society and the firm's role in the system. By doing so the author claims that a more proactive approach needs to be taken and the focus should be to lead and drive societal development rather than following other stakeholders in the system.

Figure 4
The pyramid of CSR maturity levels
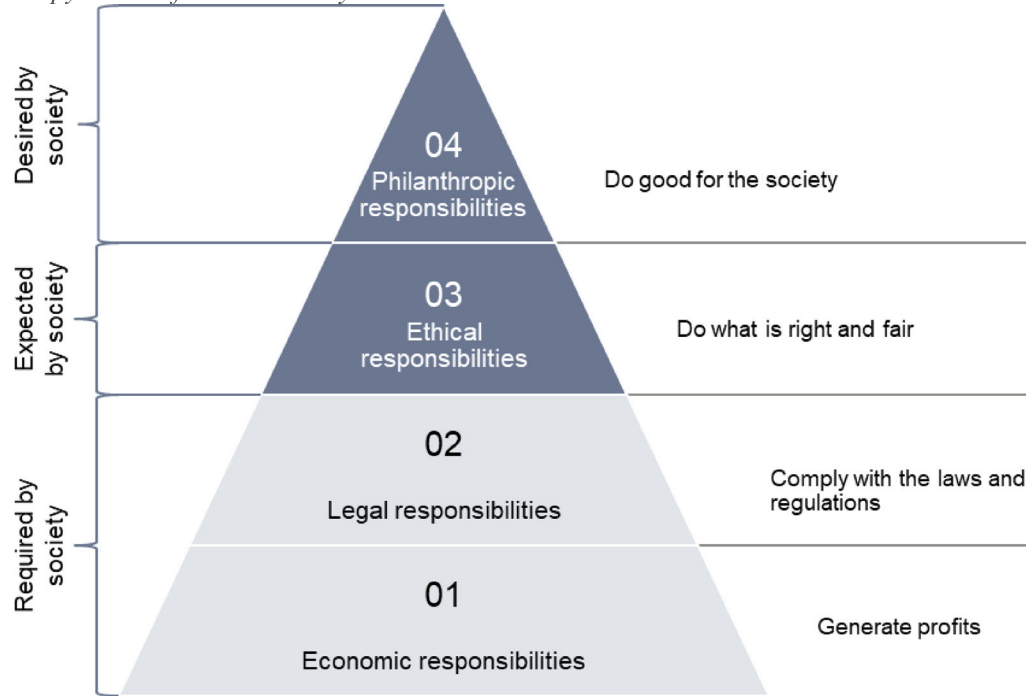
Note: Adapted from Carroll (2016)

2.1.2 Environmental Trends

The importance of sustainability in business is increasing rapidly and the number of research conducted in the field is following as the awareness increases (Goni et al., 2015; Dimitrieska et al., 2017). Dimitrieska et al. (2017) argue that sustainability is becoming an increasingly important priority for companies, and it is today almost a requirement to have a strategy concerning it. Googins and Mirvis (2010) state that the trend already in 2010 was towards the measurement of sustainability in general and measuring environmental footprint especially and the creation and issuance of environmental reports. This trend has clearly continued according to Dimitrieska et al. (2017) as environmental reporting now is seen as a crucial tool to demonstrate and share the firm's environmental performance. Furthermore, related to the trend of environmental reporting, the challenge of measuring environmental performance has gotten increased attention as regulations have put increased requirements on the companies to disclose the environmental impacts of the firm according to Dimitrieska et al. (2017). Ayadi et al. (2019) state that an important step for further developing sustainable business models is to create standardized frameworks for non-financial reporting to increase transparency and accountability and thereby increase the competition among firms by enabling comparison of them against each other. By doing so it is argued that the competition among firms in an industry would increase and thereby the incentives for adopting and leading sustainable development would increase.

Chirico & Hristov (2019) states that sustainability dimensions in value creation have been given increasing attention driven by the Agenda 2030 and the sustainable development goals created by the UN. They confirm that sustainability strategies can positively affect the performance of a company by enhancing the company's reputation and minimizing costs by optimizing the usage of resources. However, the authors further state that it is fundamental to adopt a systematic approach when implementing sustainability strategies to maximize the gains from it. Therefore, they conclude that key performance indicators (KPIs) are playing an important role in incorporating sustainability goals into the overall corporate strategy and translating the goals into actionable initiatives.

Zarzycka and Krasodomska (2021) state a key challenge of working with environmental initiatives is the choice of metrics to measure progress on environmental protection and restoration programs as well as for management decision making. The authors state that the Global Reporting Initiative (GRI) standards are the most prominent attempt in creating a unified framework for the reporting of environmental performance. Moreover, they argue that stakeholders are demanding more information about companies' environmental performance, and it is therefore concluded that firms need to become more proactive in their measurement and reporting of practices to cope with and fulfill the demands of the stakeholders. Furthermore, Zarzycka and Krasodomska (2021) conclude that a key challenge is the comparability of the environmental KPIs of different firms even though it differs between different areas. For example, it is concluded that the most common KPIs to report on are packaging and waste, greenhouse gas emissions, and energy usage, whereas it is argued that the most comparable area is the reporting of emissions.

Moreover, Zarzycka and Krasodomska (2021) conclude that the main driver of environment related KPI disclosure is the influence of environmental pressure groups seeking information related to corporate performance. The authors claim that companies' strategy is highly driven by stakeholders, and they are therefore concluding that new reporting standards have to be developed in close collaboration with stakeholder groups, such as customers, employees, and investors. Zarzycka and Krasodomska (2021) are even stating that *"joint collaboration of governmental agencies, regulatory bodies, businesses, and stakeholders is needed to take action that could change corporate reporting practices and contribute to a sustainable future"* (p. 662).

The GRI protocol has defined three different types of emissions called scope 1 emissions, scope 2 emissions, and scope 3 emissions (Hertwich & Wood, 2018). Scope 1 emissions are defined as direct emissions of greenhouse gasses that are originating directly from the operations of a company. Scope 2 emissions are defined as indirect greenhouse gas emissions that originate from the purchased electricity, heating, or cooling that are used by the reporting company. Lastly, scope 3 emissions are defined as indirect greenhouse gas emissions that originate from the whole value chain, both upstream and downstream. The authors further state that the importance and attention of scope 3 emissions have risen significantly as the requirements of disclosing the total impact on the value chain has increased. Moreover, it is stated that as most of the emissions usually are scope 3 emissions, initiatives tend to increasingly target this type of emissions as a small percentage improvement will result in a significant improvement in actual numbers. However, Sullivan (2009) states that a key challenge regarding the management of sustainability is the measurement and reporting of scope

3 emissions, which he states thereby can prevent companies from efficiently targeting indirect emissions. Hertwich and Wood (2018) state that by understanding the origin of the emissions and the total environmental greenhouse gas footprint, companies are able to identify and implement efficient sustainability initiatives. Based on the increased attention to indirect emissions Zhu et al. (2022) explain that internal carbon pricing methods have been developed as a tool to help a company to reach its carbon strategy goals. The authors conclude that by having a high enough carbon price the financial risk, the supply chain risks, and the regulatory risks can be decreased for the firm. However, the authors conclude clearly that a prerequisite for being successful with internal carbon pricing strategies is to report efficiently on their scope 1, scope 2, and scope 3 emissions.

2.1.3 Circular Business Models

In a review of circular business models, Lüdeke-Freund et al. (2018) present the closed-loop supply chain model, also called the butterfly diagram, that is based upon keeping material as long as possible within the economy in as valuable forms as possible. The authors state that this is fulfilled by first repairing and maintaining the material as long as possible, then reusing and redistributing the product, thereafter, refurbishing and remanufacturing the product, then recycling, cascading, and repurposing, and lastly extracting biochemical energy from the product. Following these reverse cycles in this declining order will, according to the authors, maximize the usage of the materials in the products which will decrease the material used for producing new products as well as those businesses adopting these principles will become more environmentally friendly. Additionally, Ludeke-Freund et al. (2018) discuss several product design strategies for enabling circular business models which consists of designing product for long-life usage, for life extension which implies that products can be upgraded or reassembled to fit new needs and designing products for technical and biological cycles which means that products are designed to easily be recycled at the end of their life cycle.

2.2 Sustainability & Strategy

Porter (2007) explains that the impact of climate change is reshaping industries' competitive landscape and states that companies need to manage climate change in the same way as other risks or possibilities. The author further argues that there is not a universal strategic solution that fits all different organizations and instead concludes that each business needs to adapt its strategic climate approach to its situation which intensifies the importance of understanding how sustainability is related to company's strategies.

2.2.1 Strategic Rationales

Dechant and Altman (1994) state that environmental leadership most often can result in a competitive advantage and argues that the rationales for engaging within environmental practices are both to be proactive in relation to regulations, to be a front-runner in the view of the stakeholders to e.g., increase the employees' enthusiasm to work for them, and the pressure from the society to measure and improve their environmental impacts. Similarly, Lowitt (2011) explains that companies that have managed to adapt and integrate sustainability within their firms have been able to extend the value for stakeholders. The author does also state that companies that

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successfully have integrated sustainability within their company have created new points of competition within the industry and established new sources for competitive advantages. Likewise, Porter (2007) explains that companies may face significant risks if they do not handle climate change as a core business problem. The author continues by stating that climate change also will create several new opportunities for firms and create new sources of competitive advantages. Additionally, Bonn and Fisher (2011) explain that three of the most common rationales for companies engaging in sustainable practices is that organizations feel that they are obligated to, that there are different kinds of regulations that force them to do so and that some companies feel that to engage in sustainability initiatives are the right thing to do.

2.2.2 Strategic Considerations and Assessments

To fully understand the potential of a sustainability strategy Porter (2007) argues that organizations both need to assess the organization and climate relation both from an inside-out and an outside-in approach. The author explains that an inside-out approach is to understand how the organization's activities are affecting the environment, which is to understand the company's value chain and its environmental impact. The outside-in approach is instead to understand how the environment affects the business which is to understand the opportunities and threats that arise in the business environment due to climate change. Moreover, Lowitt (2011) argues that there are three levels of maturity regarding how companies work with sustainability strategies, the first is to not have any dedicated sustainability strategy where the initiatives are uncoordinated. The second level is to have a dedicated sustainability strategy that is separated from the company's competitive strategy while the third level is to have an integrated sustainability strategy where the sustainability strategy is the company's corporate strategy. Similarly, Engert and Baumgartner (2016) explain that one of the most important factors enabling a successful implementation of the company's sustainability goals is to have a strategy that is integrated with the core business strategy in combination with that the strategy gets a high priority within the company.

Furthermore, Porter and Kramer (2019) describe the concept of shared value as finding ways for companies to create both economic value and social value simultaneously which thereby removes the trade-off between doing good for the society and performing well. They argue that the concept of shared value will be the next way organizations think about their businesses, and explain that shared value opportunities for companies can be created either through increasing the understanding of customers' needs and to ensure that the products are good for their customers, either by extending the value chain perspective to find new ways of productivity improvement and finally, by facilitating local clusters that can improve and secure supplier partners as well as improving the local community.

Moreover, Dechant and Altman (1994) highlight five key practices that environmental leaders do. The first one regards having a vision and mission statement that embraces environmental sustainability to create a common vision within the organization. The second step is to establish a good framework for handling environmental initiatives that advocate internal collaborations and that enable change in the organization. The third step is to establish green processes within the company and already in the design phase have the environmental perspective in mind. The fourth step is explained to be to establish partnerships that are in favor of the environment as they argue that partnership is one highly efficient way to solve environmental problems. The fifth practice is to

have both internal and external environmental-focused education to create a culture that embraces the environment as well as to foster inspiration for employees to find ideas to improve the company's environmental performance.

Placet et al. (2005) explain key insights about how to create a sustainability strategy for firms. The authors argue that to create a successful strategy all parts of the triple bottom line must be addressed as these goals should be connected and support each other. They also emphasize the importance of a good and structured approach in combination with high dedication and leadership. Moreover, they state that the hardest thing to overcome when initiating sustainability-focused innovations is inertia, i.e., the organization is stuck in old and outdated processes and preconceptions. Their conclusion is that to create a successful sustainability strategy, companies must (1) make sure that several sustainability options are being evaluated to explore different possible outcomes. (2) develop the sustainability strategy from a holistic environmental and societal perspective. (3) make sure that all stakeholders and their perspective are considered, and (4) take into consideration and calculate all risks and benefits of initiating a sustainability strategy.

Eccles et al. (2011) show that to achieve a superior sustainable performance it is essential to have a long-term strategy that permeates throughout the whole company. The authors are stating that high sustainability firms have dramatically outperformed low sustainability firms in the long timeframe in terms of financial performance. However, they explain that the difference between high and low sustainability firms has not proven to be significant in the short-term perspective. Based on these findings they conclude the importance of having long-term investors backing up the sustainability initiatives and not demanding immediate short-term results as this will counteract the results from the sustainability initiatives. Citlalli Lopez-Torres et al. (2017) argue that more mature companies are better suited to contribute to sustainable development in the long run. Contrary, Kaljonen et al. (2021) argue that to enable sustainable transitions and development it is essential to encourage new types of businesses, business models, and markets to allow new actors to enter and thereby disrupt the industry and force the established actors to develop its sustainability practices to stay competitive. Adamczak et al. (2019) argue the organizational maturity of sustainable development can be divided into five different levels, as shown in Figure 5. It is further stated that it is of importance to understand the relation between the maturity level of an organization and the sustainability goals as it is argued that wrongly applied sustainable development initiatives might mitigate the organization from reaching its sustainable targets.

Figure 5
Sustainable development strategy maturity levels

Level 1 Ignoring	No procedures of working with sustainable development. No measures are being applied and no data is gathered.
Level 2 Defining	Definition of key processes are performed, and sustainability is briefly included into the business strategy. Goals are identified and data is being partially gathered and analyzed.
Level 3 Adapting	KPIs are created based on effective resource management and sustainable development. The overarching goals of the organization are highly related to the usage of resources and the goals are spread throughout several departments.
Level 4 Managing	Best practices processes have been implemented. Performance is continuously evaluated, and processes are systematically improved. Sustainable development plays a significant role in the management of the organization.
Level 5 Integrating	Sustainable development goals are driving the organizational strategy. New technologies are an important part of the strategy. External and internal resources are being used to ensure higher sustainability. Knowledge level within the crew is measured and developed constantly.

Note: Adapted from Adamczak et al. (2019)

2.3 Change Management

To transform a business towards increasing its environmental focus is usually a process of change for companies, and it is vital that companies are aware of this process to enable the best possible outcomes of the initiatives. For example, Dechant and Altman (1994) state that one of the largest challenges to establishing an environmental leadership is how to manage the change in the organization in a good manner. Similarly, Frishammar and Parida (2019) highlight this issue by stating that transforming businesses to circular business models may need a change in the fundamental company culture and values as well as how businesses are being made. Therefore, to understand how companies have managed the aspect of change when establishing an environmental leadership, traditional change theories in combination with sustainability-specific change models are presented.

2.3.1 Established Change Theories

The change management practice is a highly researched business area with lots of theories and discussions on how to best address the issue of changing businesses. Weick and Quinn (1999) group change theories into two different categories, the first category

considers theories that have a defined start and stop, called episodic change theories, and the other group of theories views changes as a continuous process of change.

One of the most central theories within the episodic change theories is, according to Weick and Quinn (1999), Lewin's three steps for enabling change. The authors explain this model as to first unfreeze the current state within an organization to facilitate a coming transition. The second step is the transition where things are redefined and restructured, this is the step where the actual change is taking place. The final step is to refreeze the organization within the new state and to ensure that cultures and norms stay within the new way of working. However, this model has also been widely criticized where Cummings et al. (2016) state that multiple authors argue that Lewin's three-step model is too simplistic and linear to be applicable in today's complex world. Yet, the author explains that Lewin's three-step change model often is recognized as the foundation for linear change models and illustrates that other linear change processes often can be related to Lewin's three different stages but that other processes often present a more detailed view over the specific activities that occur within the unfreeze, change, and refreeze states. One of the theories that relate to Lewin's three-step model is Kotter's eight steps of change.

Kotter's (2007) eight steps of transformation is a theory intended to be a transformation framework that covers all the phases in a transformation process from initiation of the transformation and how to establish the transformation agenda in the company, to fully having initialized the transformation effort within the firm. The first step the author highlights is to establish a sense of urgency in the company to make the firm aware that a change is needed and why. Thereafter there is a need to form a group of people that will be powerful enough to lead the change initiative within the firm and that this group is well functioning and aligned to ensure that the team leads the effort in a clear way. The third step is to establish a common vision within the firm and create methods for how the vision should be integrated within the firm. The third step is to communicate the vision to the firm in combination with new strategies. Important during this step is to make sure to use every possible channel to communicate the message to ensure that it is well communicated to everyone. Following this step is to encourage the organization to act upon the new vision as well as continuously try to remove barriers to the new vision. The sixth step is to work with short-term wins to reward the organization for the work related to the new vision. The seventh step is to continuously work with integrating and improving the vision within the organization which leads to the last step to institutionalizing the new vision in the organization and making sure that the new vision is the standard way to behave within the organization. Cummings et al. (2016) argue that the three first steps relate to unfreezing the current state, the following three steps to the change process, and the final two steps to the refreeze step, see Figure 6.

Figure 6

How Kotter's 8 steps of transformation (left) relate to Lewin's three steps of change (right)
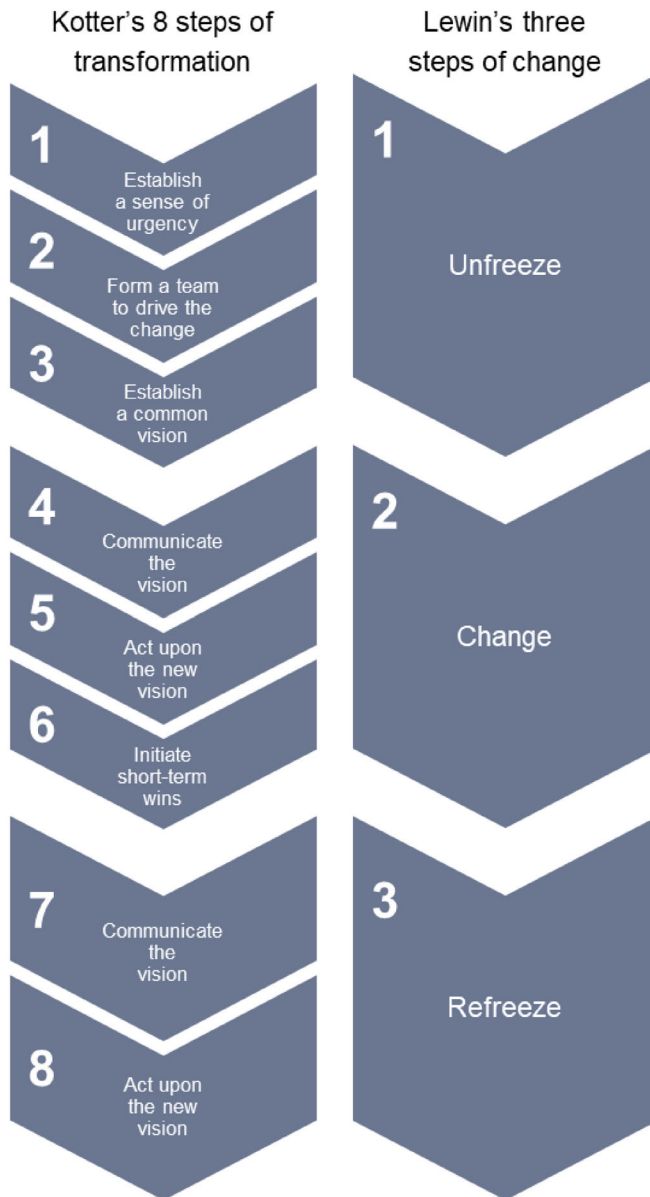
Note: Adapted from Commings et al. (2016)

However, Weick and Quinn (1999) further argue that change often is not completed in a linear episodic process, instead, they state that change rather is a continuous process that is constantly ongoing and under development. The authors explain that continuous change often is a combination of small changes in different places within the organization that together adds up to a larger transformation. Moreover, they explain that the rationale for viewing organizational change as a continuous process is that it is hard to argue what part of the process is more important in combination with that it is impossible to determine when certain processes start and finish. Weick and Quinn (1999) also explain that continuous change to a high is extent related to the culture of

the organization as it is the culture that contains all the organization's norms which lays the foundation for how well the change becomes adopted within the organization.

Moreover, Lunenburg (2010) argues that one factor that is common for all types of organizational change is the need for change agents which he explains as a person that drives the change within the organization. The author states that the change agent can be either a person internally from the organization or a person externally hired to drive the change process. One example he gives regarding external change agents is when companies hire consultants to drive a change process with the benefit that they are not to the same extent affected by the company's culture and politics. However, he argues that the success of a change agent's transformation effort is highly related to the relationship between the change agent and key decision-makers within the company. Weick and Quinn (1999) are also highlighting the importance of change agents in achieving change within organizations but argue that the role of the change agent is different between episodic change and continuous change. The authors state that within episodic change, the role is to initiate the change and bridge organizational inertia while in continuous change, the role is rather to direct the change and to identify and transform patterns within the company.

2.3.2 Sustainability Implementation Models

There are several definitions and frameworks regarding transforming businesses towards adopting sustainable business models. Frishammar and Parida (2019) explain that many large companies are trying to transform their business from a product-based logic into a service-based logic to facilitate the transition towards an increased sustainability focus. This transition from products to services are by the authors explained as utilizing circular economy practices which they define as:

> *"one in which a focal company, together with partners, uses innovation to create, capture, and deliver value to improve resource efficiency by extending the lifespan of products and parts, thereby realizing environmental, social, and economic benefits" (p.6).*

The authors provide a four-step framework for transforming businesses toward sustainable business which is based on first initiating the transformation by understanding the potential opportunities and requirements. The second step regards reviewing the current business model and identifying shortcomings and opportunities within the current business model. The third step is to design the new circular business model by integrating circular practices. The final step is to integrate the new circular business model into the business, first as a test within selected areas and then continuously scale up the circular model. However, they also emphasize that changing an organization's business models to become sustainable is not always an easy and linear process as the framework may indicate, instead they state that a transition will contain iterations and multiple trial and error loops as well as cultural changes within the company.

According to Engert and Baumgartner (2016), there are six key success factors for implementing and fulfilling a sustainability strategy within firms. The first success factor that the authors bring up is having an organizational structure that fits the sustainability strategy to reach the sufficient functions in the company and that sustainability gets a high priority and legitimacy within the organizational structure. The second success factor they highlights is to ensure an organizational culture that

embraces sustainability with a clear vision of what the company strives against and that highlights the importance of sustainability. The third success factor they explain is leadership and that leaders in the organization are aligned regarding the company's sustainability focus. The fourth success factor the author emphasizes is the importance of management control which regards having good KPIs that are measurable. The authors state that having good KPIs is important for successfully executing sustainability actions. The fifth key success factor for implementing and fulfilling a sustainability strategy is by the authors argued to be to ensure employees' motivations and that there are reward systems that are aligned with the company's sustainability strategy. The final success factor they bring up is communication where he argues that internal and external communication is important but where internal communication has proven to be particularly important for a successful development and formulation of companies' sustainability strategies.

Similarly, Lowitt (2011) introduces a framework called the CLEAR-model, see Figure 7. The CLEAR-model is explained as a circular five steps model to support the integration of sustainability in firms and to facilitate maximal value creation from the sustainability focus. The first step is to create a corporate and competitive strategy that is formulated in a way that supports sustainability initiatives and creates value for the company. The following steps are leading the strategy, embedding the strategy within the value chain, analyzing performance, and renewing the efforts.

Figure 7
The CLEAR-model for integrating and maximizing value from sustainability
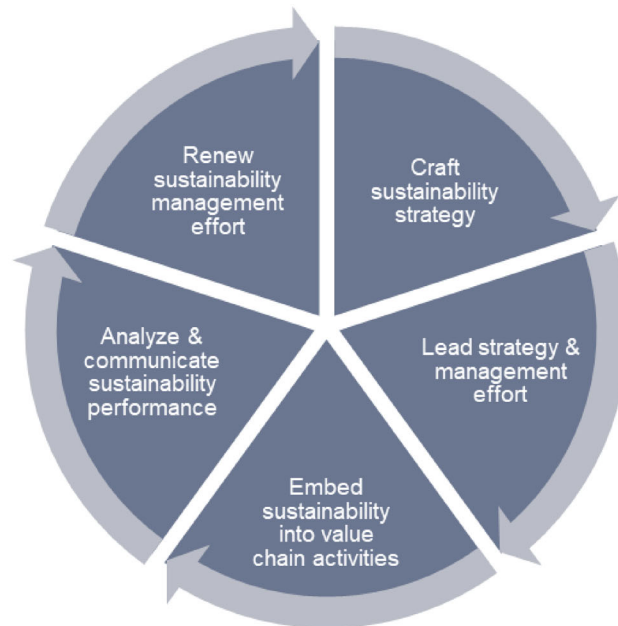
Note: Adapted from Lowitt (2011)

2.3.3 Ambidexterity

Hahn et al. (2016) state that corporate social performance is driven by both instrumental and moral rationales where instrumental rationales consider external rationales that create financial arguments to engage in sustainability initiatives while moral rationales relate to an internal willingness to do good for the society. They argue that these instrumental and moral rationales result in ambidexterity and the need to handle dual and contradicting rationales. O'Reilly and Tushman (2004) explain ambidextrous organization as to separate the exploratory function from the exploitatory function to foster exploration and exploitation simultaneously. The author's idea is that this way of handling both the current state of the organization and the future organizational visions enables the organization to increase the chances of creating ground-breaking innovations. Moreover, Hahn et al. (2016) argue that the concept of organizational ambidexterity can be used to handle the tension between different rationales for improving corporate social performance within firms to support the moral rationales and avoid the financial rationales overtaking the moral rationales. Moreover, Du et al. (2013) state that the increasing pressure from stakeholders' forces companies to become more sustainable which they argue creates a tension between and a need for balance between sustainability and profitability and argues that an ambidextrous perspective can be used to handle these tensions. O'Reilly and Tushman (2011) also conclude that organizations that are exposed to emergent change must be able to handle the tension between their current business as well as to allocate resources to the potential future needs to successfully survive in the long-term.

3 Methodology

This chapter is presenting the methodology used in the research which includes the research approach and the work process for the project. The research approach defines the research position for the study while the work process covers a detailed description of the different steps of the study, including the literature review, choice of case companies, interview study, and a description of how the results are interpreted.

3.1 Research Approach

The study focuses on how environmentally leading companies have established their position as environmental front-runners. A qualitative study has therefore been performed to understand how the companies have managed to successfully transition into environmental front-runners, which Bell et al. (2019) define as a study that collects non-numerical information to create an overarching understanding of the situation instead of focusing on numeric data which a quantitative study emphasizes. The study has taken the ontological position constructionism which by Bell et al. (2019) is explained as viewing the world as a result of interactions by social actors, as well as the epistemological position interpretivism which the authors explain is the focus on the understanding of the social world instead of specific scientific models. These two positions enabled the study to understand the importance of the social setting within companies and the environmental outcomes instead of solely focusing on specific actions in isolation from the social setting. Furthermore, the study is inductive, which by Bell et al. (2019) is stated to be that theory is resulting from research rather than that the research tests theories. This inductive approach enables the study to result in a greater understanding of how to establish a leading environmental position and extend the knowledge of how companies have established environmental leadership positions in their industry.

Gustafsson (2017) explains that a case study is a study focused on understanding a specific unit in a real-life setting. The author explains that this can be done either through single-case studies where the focus solely is on understanding one specific case deeply or through a multiple-case study where the study focuses on several units. There are pros and cons with both single and multiple case studies where the author states that a multiple case study creates more general results as the study can compare cases to each other which often creates more evident results. She further explains that single case studies are less time-consuming and often result in a better quality of the theory that is produced. In this study, the purpose is to understand how environmental front-runners have established their environment leading positions in their industry respectively and the differences between different industries in how this position has been established. To enable results that are generalizable for the industry, multiple cases within each industry need to be investigated (Gustafsson 2017). Hence, this study has been conducted as a multiple case study.

Moreover, the report has been written in collaboration with a management consultancy firm with key competencies within sustainability transformation. Bell et al. (2019) explain that taking support from industry experts or other knowledgeable external stakeholders is a good method of ensuring high quality of a report and validating findings. The supporting management consultancy firm has provided great value to the

report and the conclusions have been compared to existing knowledge to confirm knowledge or find deviating results to further elaborate upon.

3.2 Work Process

The project has been conducted in six key phases, as seen in Figure 8, to identify an area of research to create valid and reliable findings. The process has been performed over a period of five months where the phases mainly have been performed in order, but where smaller iterations have been made to ensure the correct research focus. Each phase is presented in detail below.

Figure 8
Visualization of the project's work process shown as a linear process
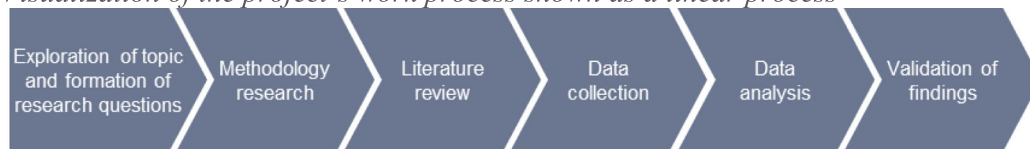
3.2.1 Exploration of Topic and Formation of Research Questions

The first phase focused on exploring the topic of sustainability front-runners and initially understanding what is known about the topic. Following was the process of setting the scope of the report which resulted in the focus on environmental front-runners. The environmental focus was chosen to be able to facilitate the comparison between the industries as sustainability, in general, is a broad concept with the risk that the different industries have their focus within different areas of sustainability with the risk of gathering non-comparable data. This scoping phase of the study was done in close collaboration with the supporting management consultancy firm to leverage their existing knowledge and their understanding of which areas are in need of further knowledge. During the exploration and scoping phase, the initial research questions were formed which were the foundation for the later phases of the study. The research questions were based on the information coming from the exploration phase and were also formulated in close collaboration with the project's different stakeholders. During the exploration phase, gaps in the currently existing literature were identified which were the basis for the development and formulation of the research purpose and questions.

3.2.2 Methodology Research

The methodology research phase focused on identifying a suitable research methodology to achieve the research purpose of the report. The goal of this phase was to identify and develop a methodology that would ensure the high quality of the research. Moreover, in this phase, other similar articles and papers were reviewed to find strengths and weaknesses in their research methodology respectively. The conclusion of the methodology research phase was that a qualitative approach is the most suitable to achieve the selected purpose of the report to be able to gather a holistic understanding of why and how environmental front-runners have established their forefront environmental position and keep an exploratory research approach.

Moreover, regarding the sampling in the study, Bell et al. (2019) explain that in qualitative research the most common way to choose samples for the study is through

purposive sampling which is a non-probability sampling method where the research questions guide the researcher to strategically choose the samples. Additionally, the authors state that researchers using purposive sampling often pick multiple cases that are different from each other to create variety in the samples. In this study where the focus is to understand how companies have established environmental leadership positions, two significantly different industries have been analyzed to identify differences between both companies within each industry, as well as differences between industries. A typical case sampling method has been used to choose the different industries, which by Emmel (2014) is explained as a method where the researcher chooses cases that can be used to understand the area that will be studied. The authors also highlight that this method demands knowledge about the area before the study to be able to pick relevant cases and therefore recommend the researcher to use external help such as knowledgeable participants to support the case selection.

Therefore, several industry experts have been consulted to identify industries that are of interest to the study due to either that the industry generally is highly environmentally focused or that there is a lack of understanding regarding environmental activities in a specific industry. Based on the consultation with industry experts, the automotive industry and the life science industry were selected based on assumptions from the industry experts stating that the maturity level and drivers behind sustainability initiatives are significantly different. Furthermore, as mentioned by Deloitte (2022), the importance of sustainability within the life science industry is considered to increase which makes it interesting to understand what is driving the increased importance. Moreover, it is mentioned by Deloitte (2022) to be significant opportunities to take advantage from in the life science industry created by the covid-19 pandemic which is mentioned to drastically has changed market.

Furthermore, the automotive industry is claimed to be mainly driven by financial results, consumer demands, globalization, and technical innovation (Technofunc, 2012). Similarly to the life science industry, sustainability in the automotive industry is considered to be of an increasing importance. However, as mentioned, the drivers of sustainability is different and the structure of the two industries are significantly different (Jordin, 2022; Jursch, 2017). These differences make it therefore interesting to compare the two industries to understand how they differ in terms of the rationales of being an environmental front-runner as well as how they are working with environmental sustainability.

Regarding the sampling of the different companies within each industry, an assessment of the environmental front-runners has been done based on several data insights. Partly, environmental ratings that provide a score of the companies' environmental performance were investigated as well as an investigation of different environmental awards given to companies. However, as different ratings rank companies slightly differently, all the included companies in the study have been validated by several industry experts to ensure that the environmental front-runners have forefront sustainability approaches. An overview of the interviewed companies can be seen in Table 1. Based on requests from the interviewed companies, all companies have been anonymized to be able to have an open discussion regarding strategic approaches and rationales regarding environmental sustainability and to be able to discuss information that the interviewed companies otherwise did not want to bring up. This has enabled the participating companies to speak freely about the topics and not having to worry about disclosing potentially sensitive information.

Table 1

Overview of the included case companies and the rationale for including them in the study

Case Company	Industry	Description	Rationale for inclusion
LS1	Life science	Producer of multiple use medical equipment	▪ Multiple awards for being a sustainable life science company ▪ Ambitious sustainability goals ▪ Sustainability is a top priority in the company an is integrated in the core strategy ▪ Highlighted as a sustainability leader by several industry experts
LS2	Life science	Producer of single use medical equipment	▪ Sustainability is an integrated part in the core company strategy ▪ Highlighted as a sustainability leader by several industry experts
LS3	Life science	Manufacturing and developing pharmaceuticals	▪ Highlighted as a sustainability leader by several industry experts ▪ Ambitious sustainability goals ▪ Multiple awards for being a sustainable life science company ▪ High sustainability ratings
LS4	Life science	Producer of single use medical equipment	▪ High sustainability ratings ▪ Highlighted as a sustainability leader by several industry experts ▪ Multiple awards for being a sustainable life science company
LS5	Life science	Producer of single use medical equipment	▪ High sustainability ratings ▪ Highlighted as a sustainability leader by several industry experts ▪ Close sustainability partnerships with other industries ▪ Multiple awards for being a sustainable life science company
A1	Automotive	Automotive manufacturer	▪ High sustainability ratings ▪ Highlighted as a sustainability leader by several industry experts ▪ Multiple awards for being a sustainable automotive company ▪ Ambitious sustainability goals
A2	Automotive	Automotive supplier	▪ High sustainability ratings ▪ Highlighted as a sustainability leader by several industry experts
A3	Automotive	Automotive supplier	▪ High sustainability ratings ▪ Ambitious sustainability goals ▪ Highlighted as a sustainability leader by several industry experts ▪ Very long-term perspective
LS Industry expert	Life science	Independent life-science industry organization	▪ Independent actor ▪ Experience from different actors in the life-science industry

3.2.3 Literature Review

Based on the methodology review a comprehensive literature review was conducted to build a theoretical foundation for the conducted research. The literature review aimed to define what has been concluded about the topic as well as to find useful concepts and frameworks for the study. Bell et al. (2019) argue that a literature review is an important part of all kinds of studies and that it is crucial to be critical when conducting a literature review. To ensure a high standard of the literature that has been used, all literature was collected through either Google Scholar or Scopus as well as it has been confirmed that all literature has been published in established academic journals and that the papers

have been referenced multiple times before. The aim of the literature review was to keep the environmental part of sustainability in focus, but as environmental sustainability often is closely coupled with other areas of sustainability, especially regarding strategic approach and transformation, general sustainability theory is included as well.

The initial keywords that were used by themselves and in combination with each other to find relevant literature were, environmental sustainability, sustainable transformation, environmental transformation, organizational change, environmental leadership, environmental front-runner, environmental strategy, and sustainability strategy. The literature review also acted as a guide and support for the data collection in terms of what topics to look for and to identify things that deviate from previous literature. This has enabled the study to extend previous literature, which is the purpose of the study, to extend the knowledge of how companies have established their positions as environmental front-runners. From the literature review, three main themes that were of interest for the study were identified. The first theme environmental sustainability is intended to understand what in general is written about the topic as well as how the concept has been developed and how the concept is measured. The second theme regards the strategic approach towards environmental sustainability to understand the underlying strategic rationales as well as the strategic formation and approach. The third theme regards change management to understand how a forefront environmental sustainability approach is established and integrated into the organization to be able to fulfill the rationales of why companies establish a forefront environmental approach.

3.2.4 Data Collection

The data collection method that has been used is semi-structured interviews which Bell et al. (2019) explain as a way of collecting data that enables the researchers to use an interview guide with predetermined topics and questions that will be asked but still offers the freedom to let the participant speak freely about the question as well as it gives the interviewer the possibility to ask follow-up questions. Moreover, the authors state that semi-structured interviews enable the interviewer to address the question in the order that is most suitable for the situation. Utilizing this data collection method has enabled the study to both steer the interviews toward the key focus areas regarding environmental sustainability as well as during the interviews identify deviating insights and direct further focus towards these areas.

The initial contact details were received from either the company's communication departments, through the companies' websites, through LinkedIn, or through existing contacts from the sustainability experts that have been consulted in the study. Once the target companies were identified, suitable persons to interview were identified to be persons responsible for preferably environmental initiatives or secondly sustainability initiatives. In general, one interview with every identified company was held as it was considered to provide more value for the study to have a broader knowledge about many different companies rather than a deeper knowledge about fewer companies. However, for one of the companies, two interviews were held because all questions could not be answered during the first interview, and where the interviewees gave a specific recommendation to another person that could answer additional information of value for the study. For all other interviews, the required information was received from the initial interview. An overview of the conducted interviews is shown in Table 2. Furthermore, all the interviews were sound recorded to be able to re-listen to the

interviews to avoid misinterpretations. In addition, both authors of this report were present during all interviews and both interviewers took extensive notes structured in chronological order which enabled the interviewers to compare and combine two sets of notes to ensure alignment of the information from the interview.

As seen in table 2, 5 different life science companies and one life science industry expert were consulted in the report. Furthermore, three different companies have been interviewed from the automotive industry, divided into four different interviews. The reason why interviewing more companies from the life science industry compared to the automotive industry was that the companies from the life science industry proved to be more different from each other. Following the recommendations from Bell et al. (2019), saturation from the interviews was targeted. As the automotive companies proved to be structured similarly and have the same approach to sustainability saturation was achieved earlier. However, this might increase the risk of missing interesting factors that might have been brought up from other automotive companies. To mitigate this risk the findings were validated by industry experts from the automotive industry to minimize the risk of missing important nuances.

Table 2
Overview of the interviews including the industry, role of the interviewee(s), date, and duration

Interview	Case Company	Industry	Role	Date	Duration
1	LS1	Life science	Sustainability Communications Manager	20220321	1 hour
2	LS2	Life science	Environment, Health & Sustainability Manager	20220323	1 hour
3	LS3	Life science	Climate Resilience Manager	20220325	1 hour
4	LS4	Life science	Sustainability Specialist	20220328	1 hour
5	LS5	Life science	Sustainability Manager, Vice President Sustainability	20220420	45 minutes
6	A1	Automotive	Sustainability Analyst	20220321	1 hour
7	A2	Automotive	Quality Manager, Site Manager	20220329	1 hour
8	A2	Automotive	Sustainability Manager	20220407	45 minutes
9	A3	Automotive	Environmental Manager	20220412	1 hour
10	LS Industry expert	Life-science	CEO	20220304	1 hour

3.2.5 Data Analysis

The next phase of the project concerned the analysis of the results from the case studies. The data has then been analyzed through a thematic approach which by Bell et al. (2019) is argued to be one of the most used approaches when analyzing qualitative data. The authors state that thematic analysis is based on finding general themes in the collected data such as topics that are being repeated in multiple interviews or similarities regarding how participants in the interviews argue regarding a certain topic. From the analysis of the interview notes in combination with the audio recordings of the interviews, ten main categories of data were identified that all, or most of, the interviewed companies highlighted. These ten categories of information were then structured into five main overarching themes that proved to be of importance when trying to understand how companies have been able to establish themselves as environmental front-runners were identified and support the fulfillment of the two research questions. The first theme was the rationale and drivers behind the decision to target to establish themselves as an environmental front-runner. The second identified aspect was the organizational structure of the company. The third aspect was continuity and awareness. The fourth aspect was measurability and incentives, and the last theme was success factors and common barriers emphasized during the interviews. These five themes are resulting in two key parts, the purpose of being an environmental front-runner, and secondly the process of sustainability that a company goes through in the transition process. The findings from these two themes were then analyzed based on these two main research questions and enabled general conclusions to be drawn, both on a cross-industry specific level, but also industry-specific conclusions which then enabled overall conclusions to be drawn and the research questions to be answered. Figure 9 summarizes how the process was structured to reach the conclusion of how to establish an environmental front-runner and the differences between the investigated industries.

Figure 9

Visualization of the structure of the analysis and the foundation for the discussions and conclusions
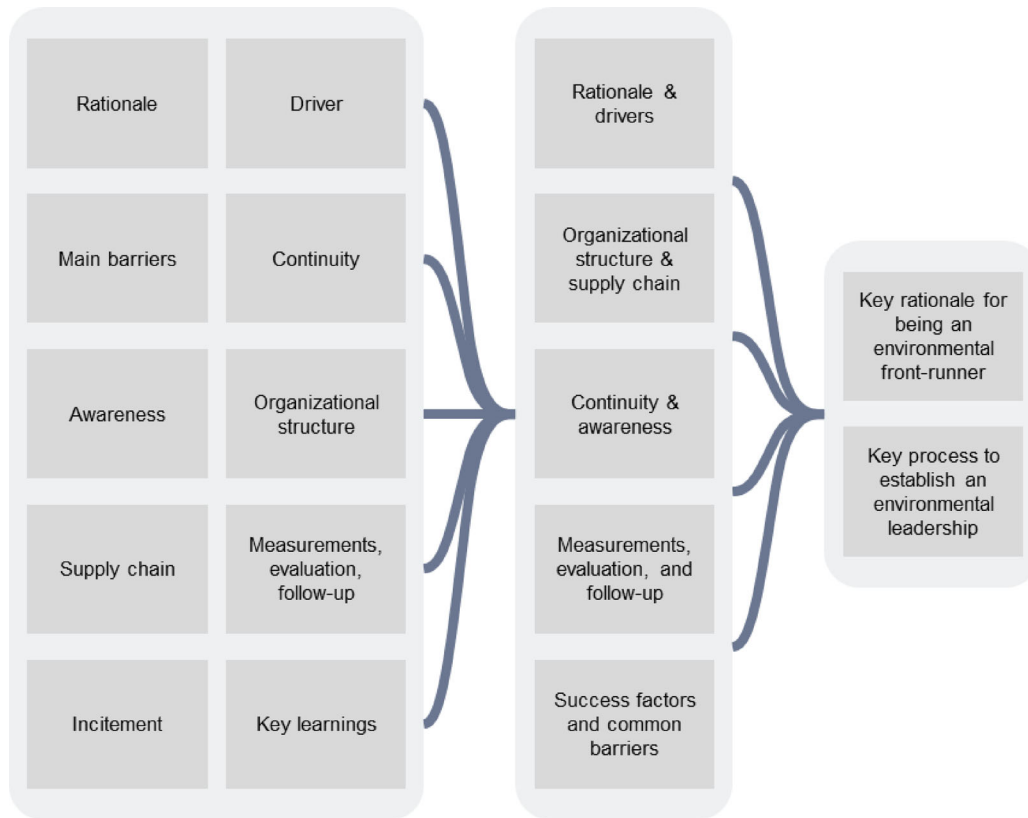
3.2.6 Validation of Findings and Models

To validate the findings and the created models several discussion touchpoints with experienced stakeholders were held, which according to Bell et al. (2019) is a suitable method to use for validating results and conclusions. The discussion touchpoints were conducted both as formal meetings with the purpose of critically reviewing and discussing the different findings or proposed models, but also informal reviews were conducted to get a more relaxed and open discussion about it. The participants have had various roles and key competencies ranging from sustainability specialists to senior consultants with extensive experience in various industries and a wide range of different companies. Therefore, the input from these reviews has been of great value for the research and has ensured the validity and applicability of the findings.

Bell et al. (2019) suggest that four different types of reliability and validity need to be fulfilled to ensure high-quality findings when doing qualitative research. Firstly, external reliability needs to be ensured meaning that the study can be replicated. It can be argued that this study is repeatable as the discussions and conclusions are based on general industry characteristics and not dependent on unique responses from an individual company and answers strongly deviating from the industry characteristics have therefore been identified. Moreover, Bell et al. (2019) state that the study needs to be internally reliable, meaning that the study should not be affected by the

interpretation of the answers from the interviewer. In this study, both authors have been participating in all interviews and drawing conclusions together to avoid wrongly interpreted data.

Furthermore, considerations regarding both internal and external validity need to be taken. Internal validity is if it can be confirmed that a cause-and-effect relationship is established in the study and that the results are not explained by other factors according to Bell et al. (2019). They state that internal validity is the strength of qualitative research, and this is therefore considered to be low risk. Lastly, external validity refers to what degree findings can be generalizable. This risk has been highly considered in the study and the target has been to have enough interviews to ensure that the findings are repeatable and that the conclusions truly match the general company within either the automotive or life science industry.

4 Empirical Findings

This chapter will present the findings from the interviews conducted with companies in the automotive and the life science industry. Five areas have been identified to be of importance when trying to understand why and how the companies in the two industries have become environmental front-runners: rationales and drivers, organizational structure and supply chain, continuity and awareness, measurements, evaluation, and follow-up, and finally success factors and common barriers. The findings will be presented on an industry level where each industry's unique characteristics will be shown. This means that the unique responses from the individual companies will not be elaborated upon.

4.1 Rationale & Drivers

The first common theme discussed during the interviews was the rationale and the drivers behind being an environmental front-runner. The rationales and drivers highlights the purpose of why companies have established themselves as environmental leaders.

4.1.1 Life Science

From the conducted interviews, several rationales and forces that are driving sustainability initiatives in the companies were highlighted. One of the first things two of the interviewed life science companies highlighted was that they feel that they actively must work with sustainability whereas LS2 said that *"we must do it, we can do it, and we want to do it"*. However, the fact that the companies stated that they must do it was not meant to be just as a reactive approach to regulations, instead the word was used as a total assessment of all rationales that together add up to the fact that sustainability initiatives are a vital part of the company's long-term market position.

Multiple companies were also stating that working proactively with sustainability initiatives is a way to position themselves in the market both now and in the future where LS1 stated that *"our sustainability work is one of our key pillars in how we are positioning ourselves within our industry"* and argued that they want to be the company people thinks about when talking about sustainability within the life science industry.

LS2 had a slightly more long-term positioning approach regarding their goals for working with sustainability where they argued that *"We are convinced that our sustainability work is favorable for our long-term business"*. Additionally, LS4 highlighted that one of their key rationales for their distinctive focus on sustainability is to establish long-term strategic advances through becoming an industry leader regarding sustainability. They explain that they have conducted scenario analyses that indicated that the best move for them is to work towards being an industry leader regarding sustainability within the life science industry to both cope with potential future risks within the industry as well as to establish a competitive advantage towards competitors. Similarly, LS5 argued that their extensive sustainability focus is essential for their long-term survival, both in terms that their sustainability approach is a risk-minimizing tool as well as a tool that creates new business opportunities.

Furthermore, a factor that was brought up by four out of five firms as a key rationale for companies' extensive sustainability focus was that there is a significant market demand from the customers where customers want the companies to be better than industry requirements. However, an independent industry expert did emphasize that customer demands within the life science industry are lower compared to other industries as the most important thing for the products always is to cure patients in the best way possible before being sustainable where he stated:

> *"In the life science industry, the top priority is always to cure patients in the best way possible. Companies can then add sustainability as a secondary priority, but no one will create a product that has worse performance due to improved sustainability features. For example, think about a cancer drug, if you have one drug that is better at curing patients, but is significantly worse from a sustainability perspective, everyone will still buy that drug in comparison to a drug that is worse from a curing performance perspective but better from a sustainability perspective."*

There are also clear internal motives for the interviewed companies to have sustainability as a top priority within their companies where four of the five life science companies explained that an important rationale for their sustainability focus is to create an attractive workplace for their employees. For example, LS3 stated that *"We work with sustainability for both our current employees and also for our future employees"* where they emphasize that their sustainability initiatives are a way to both attract and maintain the best talents. However, LS5 did also state that they not only had positive effects on employees internally but that their sustainability focus also made them a more attractive company from a partner perspective. Related to that a clear sustainability focus engages employees, four of five companies explained that there is an internal willingness to work with sustainability where LS1 stated that *"we do it for the society"*, LS2 *"we want to do a difference",* and LS3 *"We want to be a fair player in the industry"*.

Moreover, three of the five companies did also state that there are clear financial benefits from their sustainability focus. For example, LS3 explained that environmental sustainability often is related to financial benefits where they exemplified this by stating that they work towards becoming more environmentally friendly by removing waste from their different processes and that removing waste saves lots of resources which ends up in financial savings. However, LS5 explained that their extensive sustainability focus generated higher margins on their products. Additionally, three of the five life science companies did state that sustainability also is a way to attract investors where the companies explained that investors are interested in companies with a great sustainability profile as well as that having a forefront sustainability profile unlocks lots of green investment capital from investors that only invests in highly sustainable companies.

While there are several rationales for why the interviewed companies have a strong focus on sustainability, the main driver for the internal work is a strong commitment from the top decision-makers in the respective firms where all firms stress the importance of engagement from the top to drive the daily sustainability initiatives. In all the cases, either the CEO or someone in the top management team has the overall responsibility for sustainability. Having strong commitment from the top was stated by the interviewed companies as one of the key success factors for being able to make

crucial decisions that benefit the environment, as this enabled them to get the right resources for driving the sustainability initiatives and to make sure that sustainability is a top priority within the company. One example given from LS1 of how sustainability is made important within the firm is that the CEO once every quarter, at the internal meeting with the whole company, has one dedicated agenda item to discuss and follow up on the firm's sustainability progress. They argue that this way of having a clear commitment from the CEO is a way to stress the importance of sustainability throughout the whole company and to ensure that everyone is working towards the same goals.

Apart from that the sustainability focus is driven from the top, four of the five interviewed life science companies mentioned that there also are several bottom-up forces that are driving sustainability initiatives where for example LS2 state that they have several enthusiasts internally that work actively with sustainability. Similarly, LS4 explain that apart from that sustainability is driven from the top, there are employees that are highly engaged in sustainability and that drive it internally within the firm's daily operations. LS1 explains that there is a clear need that the sustainability focus to be driven both from the top and from the bottom where they explain that

> *"Leadership is very important to drive the sustainability focus within the firm to make sure that everyone in the firm works towards the same goals. [...] Leaders can show the direction and vision for the company, but the actual work must be conducted within the different business units, hence we have a top-down, bottom-up approach."*

4.1.2 Automotive

The interviewed companies from the automotive industry all highlight the importance of sustainability and to actively integrate and promote sustainability in the business. A key factor impacting the strategy and vision which was highlighted by all the interviewed companies was that they have all been highly focused on sustainability for a long time and that it has been integrated as a key part of the company's identity. A1 even stated that *"sustainability is a vital part of our DNA"* which they argued impacts the way they work, their decision-making, and the company's core values.

A common factor for all automotive companies is that an important driver behind becoming an environmental leader is the customers. It is stated by the companies that the sustainability awareness amongst the customers is increasing rapidly and thereby the requirements that the companies have to live up to are following as a consequence. Especially environmental sustainability, with a special focus on emissions from greenhouse gasses, has been highlighted to be driven by increasing customer demands as it is stated that this is the factor that is the easiest to measure, compare, and follow up.

Moreover, all interviewed companies in the automotive sector mentioned investors, and especially the trend of green investments, as an important driver and a key rationale for the companies to position themselves as environmental front-runners. One of the interviewed companies stated that by positioning themselves as an industry leader within environmental sustainability the access to capital is significantly increasing and the cost of capital is decreased due to the rapidly growing trend of green investments which results in large amounts of capital being available for investments in the companies that are successful in establishing themselves as sustainability leaders.

It is further mentioned in the interviews that environmental leadership and superior financial performance are correlated. A1 stated that *"it is profitable to be sustainable"* and *"superior performance and sustainability are closely intertwined"*. However, the majority of the interviewed automotive companies did not see that they achieved any short-term financial advantages and they stated that sustainability is not a factor that in the short term increases the margins or profitability from sold products. A3 stated that superior financial performance rather is related to being more attractive to investors and thereby decreasing the cost of capital. Moreover, A2 argued that superior financial performance is achieved by enabling better use of resources and exemplifies it by presenting data of how the energy consumption from their sites has been decreased through their sustainability initiatives and thereby stating that the financial performance has improved due to the decrease of energy costs. A3 argued that the main part of their superior financial performance is seen when having a long-time frame. By estimating how the development of the cost of emitting CO_2 gasses is projected to increase in the future, it is according to their arguments an attractive business case to invest in and lead the development of environmental sustainability. Company A3 stated that the decisive factor is that they have been able to apply a long-time horizon, in this case, 20+ years, which gives the business case a positive present value. They stated that shorter time frames, around the normal 3-5 years of time horizon, do not result in a positive present value and would therefore counteract the development of sustainability initiatives.

Furthermore, all automotive companies did highlight the importance of being based in the Nordic as a key success factor for their business model. A3 claimed that *"We have better preconditions to be environmental leaders in our industry by being based in Sweden than our competitors"*. Furthermore, A2 stated that the well-established societal focus on environmental topics is highly impacting the way they are able to integrate sustainability into their business model and is considered to be of great importance by creating a strong internal awareness of the importance of sustainability. Moreover, it is mentioned in the interviews that the regulations and influence from external stakeholders are strongly impacting and promoting a strong business focus on environmental leadership. The Nordic countries are in many ways global leaders in adopting sustainability regulations and this is mentioned in several of the interviews to spread and influence the companies in the region which is argued to be an important driver. A3 even stated, *"If we are unable to deliver what the customers require, then our competitors will for sure not be able to deliver it either as we have the perfect conditions in Sweden and our global competitors have not"*.

Lastly, it is mentioned that an important driver is the target of being first on the market with ground-breaking and possibly disruptive technology where the main competitive factor is the sustainability impact of the product. A3 stated that one of their key targets of being a leader in environmental sustainability is to profit from the price premium they are assuming will be present if being the only one on the market offering a completely new technology with significantly lowered environmental impact. They did also state that by being first and thereby being the only one profiting from the price premium they expect to be able to achieve an attractive business case of investing in sustainability which would be harder to achieve if not being the leading player in the industry.

4.2 Organizational Structure & Supply Chain

The second common theme that was discussed during all the interviews was around how the interviewed companies had structured their organization to establish an organization that enables high sustainability focus. Internal organizational structure and the expansion of sustainability to their supply chain was discussed.

4.2.1 Life Science

In all the interviewed life science companies, the top responsibility for the company's sustainability focus is held by either the CEO or someone in the top management team. How the actual operative sustainability work is conducted differs slightly between the firms. Four of the companies have small, dedicated sustainability teams within the organization that operationalize and manage the sustainability initiatives. In LS1, the overall responsibility is anchored in the management team which supports the dedicated sustainability team that has the responsibility to operationalize sustainability initiatives. However, they stated that the best solutions are created locally in the organization. Therefore, they have one responsible person for sustainability in each business unit that can drive the sustainability work locally within the company where they also highlighted that it is crucial that there are responsible sustainability persons at all different levels in the company to ensure continuous improvement and awareness within the whole firm. The goal they expressed with this structure of a small sustainability function and additionally responsible persons for sustainability initiatives in all places and levels in the organization is to create common ownership for the sustainability initiatives in the whole organization to align the organization towards the same goals.

A similar structure was presented by LS3 which has a global sustainability organization in which one of the members of the global top management team is the head of. This global sustainability team is the owner of the sustainability strategy and has the overarching responsibility for strategic sustainability questions. The goal is then to create ownership for sustainability initiatives locally within the firm and in the functions by both having people in the operative organization that has responsibility for sustainability initiatives for their specific function. The functions are also measured and evaluated on several KPIs to further make them responsible for sustainability questions and to be able to track and improve their work. Moreover, in LS4 a similar top-down structure is presented where there is a small sustainability team with the overarching responsibility for the company's sustainability strategy and the firm's sustainability progress. This sustainability team has strong support from both the CEO and the top management team where one of the members from the top management team also is part of, and head of the sustainability team. The sustainability team then has the responsibility to support and manage the sustainability initiatives within the company. Compared to LS3, LS4 does not to the same extent have dedicated responsible people for sustainability initiatives within the organization, instead, they try to involve everyone in the sustainability work and empower the ones that are interested in sustainability to increase their responsibilities and authority regarding sustainability questions.

Moreover, LS5 stated that they have a central sustainability committee responsible for strategic decisions and that this sustainability committee is meant to be cross-functional and therefore includes functions such as human resources, finance, procurement as well

as the legal function. However, LS5 did also state that they have sustainability committees in each business area of the company which are more focused on the implementation of the sustainability initiatives.

In contrast to the other life science companies, LS2 explained that they have no pure sustainability team, instead, there is a high sustainability focus from the CEO and the top management team who have the overarching sustainability responsibility. Additionally, there are several managers in the company that have sustainability as one part of their main responsibilities. Similarly, some people in the different business units do also have sustainability as part of their main responsibilities for their specific business unit. They also stated that earlier the sustainability initiatives have been driven by individuals in a project-based group with support and directives from the top management team but that they now try to have a more structured organizational approach towards how to organize for promoting sustainability, where the responsibilities are clearer and to a higher extent distributed within the whole organization.

Regarding the supply chain, four out of five companies stated that one of their main sustainability initiatives towards their suppliers is their supplier code of conduct in which both LS1 and LS2 explained that they have certain environmental requirements that their suppliers need to fulfill to qualify as a supplier for them. Three of the five interviewed companies did also state that they work closely with some of their suppliers to help them become more sustainable. LS2 did for example state that *"we work together with our key suppliers to educate them, inform them and affect them in order to make them more sustainable"*. LS3 explained that *"we rank our different suppliers based on certain criteria that measures their sustainability performance, we then use this ranking in the way we work with the different suppliers"* they also stated that *"in general we work towards more data as well as to educate our suppliers regarding sustainability initiatives"*. Moreover, LS4 explained that they work closely with their most prioritized suppliers where they try to collaborate with them. However, they also stated that for their smaller suppliers they use more sustainability requirements to ensure that they fulfill certain sustainability targets. LS5 stated that they have a supplier standard that includes several sustainability aspects that all their suppliers must sign but they did also explain that they have different degrees of collaboration with their suppliers regarding sustainability depending on the type and importance of their supplier.

Moreover, a non-company loyal industry expert from the life science industry explained that to reach the full value potential from firm's sustainability focus, companies must expand their view from just concern their own companies their products and their suppliers to also consider other stakeholders in the ecosystem such as partners to optimize sustainability from a larger perspective. The expert gives two examples from companies that have expanded their ecosystem view. The first example is that instead of optimizing a cancer drug from a sustainability perspective and risking the drug's performance, pharma companies can collaborate with water cleaning companies that are able to remove almost all harmful particles from the water which results in both significantly better sustainability while maintaining the same drug quality. The other example brought up was that instead of focusing on creating sustainable nitrous oxide, the nitrous oxide could be cleaned after its usage, resulting in a more sustainable ecosystem than just optimizing the product in isolation as well as that the product is not impaired by small sustainability improvements.

4.2.2 Automotive

All the interviewed automotive companies have a person in the executive management team who has sustainability as a key responsibility. The interviewed companies are all underlining the importance of having a clear commitment from the top management team that is sponsoring initiatives and providing opportunities for different sustainability initiatives to be developed and improved. It is argued in the interviews that by having a representative in the executive management team responsible for sustainability the right attention and awareness are ensured which spreads throughout the company.

Moreover, all interviewed automotive companies have established a sustainability team that has the responsibility of supporting and sponsoring sustainability initiatives throughout the organization. Company A3 mentioned that the role of its sustainability team is not only to support sustainability initiatives but also to bridge the gap between sustainability and more technology-focused business areas. It is claimed that this strengthens the awareness of sustainability throughout the organization as well as enables cross-functional processes to be established. One of the interviewed companies has established a sustainability board, led by the CEO, where the major sustainability initiatives are decided, and this is argued to provide the right level of influence and decision making to take the right actions in an efficient way by ensuring that the CEO is supporting and impacting the initiatives.

Moreover, a common factor mentioned by all the interviewed automotive companies is the importance of integrating sustainability as a key part of the roles and processes conducted by the company. By integrating sustainability as a central part of the overall corporate strategy the companies claimed that awareness and a sense of responsibility are created. Company A3 stated that this responsibility structure enables them to drive sustainability initiatives as any other initiative without having to do any additional adoptions of the normal way of working. Thereby they stated that they can utilize the full potential of the whole organization and ensure maximum output is achieved.

The interviewees from the different companies in the automotive sector are all aligned when they explained that one of the greatest challenges that they have is how to work with sustainability towards the rest of their supply chain. Company A1 stated that *"We have a huge supply chain which has forced us to only focus on sustainability from our tier 1 and tier 2 suppliers, and in some specific cases the tier 3"*. Moreover, company A2 stated that *"The area where we can learn and improve the most is how we work with our suppliers to support and develop their transition towards a more sustainable business"*. Company A3 explained that they have mainly been focused on ensuring fulfillment of ethical requirements from their supply chain and that sustainability is getting increasingly important, however, they concluded that there is much to develop in this area for the company.

All the interviewed automotive companies did state that they are tracking their scope 1 and scope 2 emissions, and they are all in the process of starting to include scope 3 emissions more actively in their sustainability targets. Company A3 did state that they have initiated the process of trying to identify suitable targets and KPIs for the scope 3 emissions to include in the overall sustainability assessment that they are doing. Company A2 has similar to company A3 clear targets and KPIs for scope 1 and scope 2 emissions but no finished ones relating to scope 3. Company A1 stated that formal

requirements and regulations regarding the scope 3 emissions are expected to dramatically impact the automotive sector and the way sustainability is perceived as most of the emissions are coming from the usage of the end product and not the manufacturing which they concluded is a key differentiator compared to other industries.

Two of the interviewed companies are among the largest Swedish companies and they both mentioned in the interviews that they see that they are playing a vital role in the sustainability journey of the whole automotive industry. Company A2 explained that they are having several highly influential customers that are supporting their sustainability transition. They did also mention that the customers are providing training programs, guidelines, and in some cases joint workshops. The motive for supporting the other players in the supply chain was explained to have two positive effects, the first one is that the sustainability performance of other players in the supply chain will affect the scope 3 emissions of the other actors in the supply chain. The second result that is mentioned is that the active support will enable relationships between different actors to be established or strengthened which according to company A2 is believed to play an even more important role in the future to mitigate various supply chain risks. Company A1 concluded this topic by explaining that *"as an industry leader, you will get the opportunity to take the biggest decisions which will direct the development of the whole industry and highly influence the other actors"*. They did further elaborate on this statement by explaining that by being proactive and working closely and supporting within their supply chain, they can ensure an industry development aligned with their internal direction and thereby ensure to benefit maximum from the industry sustainability development.

4.3 Continuity & Awareness

The third common theme that was brought up during all the interviews was how the interviewed companies have managed to create awareness regarding sustainability in the organization. Moreover, the theme also includes how the interviewed companies have enabled continuity regarding their extensive sustainability focus.

4.3.1 Life Science

One thing that all interviewed life science companies did state is that it is vital to ensure continuity and awareness to have sustainability as a core and integrated part in their overall business strategy where e.g., LS2 stated that *"sustainability must be addressed as something that fully is integrated within what we do"*, LS3 explained their approach as having sustainability fully integrated within their strategy and use sustainability as a strategic lens which they look through, and evaluate decisions with. LS1 stated that they use sustainability to create shared values which is the same term that LS5 used to express that they do not see sustainability as an add-on but instead, as something integrated that creates shared values for all their stakeholders. All five life science companies did also highlight that it is vital to integrate sustainability within the whole organization and make everyone responsible for the company's sustainability focus. LS1, LS2, and LS5 stated that they delegate responsibilities regarding sustainability to different people and functions in their companies. LS3 stated that they have used their chosen sustainable development goals to create KPIs that they then break down to all their function, and sometimes to specific individuals, which they then use to create ownership for sustainability questions within the operations.

Another factor for ensuring continuity and awareness within organizations that was highlighted by all life science companies is internal communication regarding sustainability. For example, LS1 stated that *"internal communication is highly important for our sustainability work in order to share our sustainability purpose to the organization to make everyone strive towards the same goals"*. They also explained that once every quarter, the CEO has a meeting with everyone in the company where one agenda item is to discuss sustainability progress. LS5 explained the importance of internal communication as *"a key learning for us is to clearly communicate what we think is important and what we should focus on in order to align the organization and to avoid being too broad in our sustainability approach"*. All interviewed companies did also state that an important cornerstone in creating awareness within the organization is to engage the employees regarding sustainability which is expressed to be done through education, activities, workshops, and other activities focused on sustainability. LS4 did also explain that they have certain processes for finding and embracing people that are extra passionate about sustainability to further intensify the importance of sustainability within the day-to-day operations. Another thing that LS3 does to create engagement within the whole firm is that they have a central fund for sustainability initiatives which all employees can seek funding from to realize different sustainability ideas they come up with.

Several interviewees did also highlight the importance of having long-term thinking regarding sustainability initiatives and setting up long-term goals. LS1 explained that they constantly increase their goals to always try to improve and become better with a clear focus on continuous improvement regarding sustainability within the whole organization. Both LS1 and LS2 did also mention the fact that they do not think that they ever will be finished with sustainability but that it is a process that always can become better. LS3 stressed the importance of long-term goals and increasing sustainability ambitions and goals as an important factor in their continuity regarding sustainability while LS4 stated that they think the combination of both long and short-term goals is important.

4.3.2 Automotive

The interviewed companies within the automotive industry did all explain that they are trying to integrate sustainability as an integrated part of the overall business strategy. It is mentioned both directly and indirectly during the interviews that a key challenge related to this is to ensure that sustainability is given the right attention as they explained that it is easy that the sense of responsibility gets diluted throughout the business. For example, A1 clearly stated that this is one of their main challenges regarding sustainability and they have taken several actions to counteract and mitigate this risk. They explained that the two main actions to mitigate this challenge are to firstly establish a sustainability team led by the CEO whose purpose is to ensure responsibility and to show the importance of sustainability to the rest of the company. The second action taken is to have a high focus on internal training to continuously inform and remind about sustainability throughout the organization. Similarly, company A2 explained that they have established sustainability committees with the purpose of having cross-functional teams gathered to spread and sponsor sustainability initiatives where they claimed that this is beneficial for creating and maintaining a high sustainability awareness level. A3 stated that by integrating sustainability in the general strategy it automatically gets considered in the decision-making process which according to them thereby ensures the right level of awareness. Moreover, A3 stated

that they have managed to establish an internal alignment of the purpose of sustainability and the ongoing initiatives which they stated is resulting in general support and engagement that is driving a desire to further develop and continuously improve the sustainability work.

A2 stated that sustainability targets and KPIs are important tools to create awareness of sustainability performance. They stated that *"Our KPIs related to CO_2 emissions have really helped us to understand what actions to work on to reach our targets. [...] By tracking the progress an overall awareness is created and it is easier to follow-up and remind about the progress"*. A1 elaborated in the interviews on the importance of having good KPIs and explained that a key learning from their side during the sustainability transition that they have gone through is the importance of having good KPIs that are measurable and actionable. On the other hand, they did also state that bad KPIs which are not easily measurable and actionable can even counteract the sustainability initiatives and therefore they explained that it is essential to ensure the right KPIs are used, and careful considerations should be performed before adopting new ones. Similarly, A3 argued that their company vision and performance targets are strong enablers for awareness of the organization.

All interviewed companies in the automotive industry did not talk about or highlight internal communication practices as a key initiative to spread awareness or to ensure continuity. It was rather stated that the awareness and continuity were created by having clear targets and ensuring sustainability teams are present close to support and sponsor the initiatives that get developed.

Lastly, the importance of having a long-term perspective was highlighted in the interviews. Especially A3 stressed the importance of having long-term horizons as they stated that it provides a clarity of the direction of the company and shows what vision they are trying to achieve. Moreover, it is explained by A3 that by accepting long-term goals, they can show that they are offensive and can adopt and target the truly disruptive sustainability targets which they claimed not is a viable option to do in the short or mid-term perspective. They did state that they have adopted targets that are targeted to be achieved in the next 25 years which is significantly longer compared to the targets adopted by A1 and A2 who explained they rarely have targets that are exceeding 10 years' time horizon.

4.4 Measurements, Evaluation, & Follow-up

The fourth theme that all the interviewees discussed was how they worked with measurements, evaluations, follow-up, and incitements in relation to their sustainability initiatives. The measurements, evaluations, follow-up, and incitements have been bundled together into one theme as they in the interviews were explained to be closely related.

4.4.1 Life Science

To track and understand sustainability progress all interviewed life science companies explained that it is highly important to have targets that the company works against as well as to have some way to follow up on the targets. LS1 stated that *"we are successful in our sustainability work as we have clear targets and goals and that we use those targets to take active actions to achieve our targets"*. LS2 explained that they use a backtracking method to set their target based on their future wanted position, they then

use external KPIs from the industry to connect them to their set targets and to continuously track their progress. They also emphasized that to follow up on the KPIs, it is highly important to be able to continuously improve and in the long run fulfill the goals.

LS3 explained that *"we use several KPIs that are degraded down to the functions and sometimes to specific individuals in order to continuously measure and evaluate performance"*. They also explained that they are connected to the Science-Based Target Initiative which they use as a support to set their targets and KPIs and highlighted that they think it is important to have the same internal targets as they present externally. Moreover, they explained that they think it is important that the KPIs are set to be related to the firm's sustainability risks being able to track and improve on the most vital sustainability areas the company is facing. LS4 stated that within their sustainability approach they have different sustainability areas which they further have broken down into several KPIs that they use to track their sustainability progress. They also state that they think it is important to increase the usage of common industry KPIs to be able to compare different companies and understand their relative performance more easily.

LS5 did also emphasize the importance of goals and KPIs and explained that they even include different sustainability measurements within people's individual incentive programs to further stress the importance of sustainability and to create clear incentives for people to work towards the firm's sustainability goals. Similar individual sustainability processes are also brought up by LS2 and LS4, where LS2 explained that all employees have sustainability as a part of their individual development program, and where LS4 clarified that sustainability-related questions that regard what each employee can do to improve the company's sustainability are asked all employees on a yearly basis.

4.4.2 Automotive

The measurability of the sustainability performance was mentioned by all the interviewed automotive companies to be an important factor in the process of becoming successful and maximizing the value created from the sustainability initiatives. A1 stated that *"if you can't measure, you can't improve"* and they stated that measurable targets are essential to enable continuous and incremental improvements to be made. Moreover, the company stated in the interview that the KPIs they have developed is the foundation to the overall sustainability and the base for continuous improvements to be implemented. Both A2 and A3 highlighted the importance of having actionable and measurable KPIs and it is stated that the KPIs are used for identifying activities to improve to reach the targets.

A trend that is mentioned in the interviews is the increased requirement of providing transparency and to provide comparable measurements. A1 explained that external stakeholders, such as investors, customers, suppliers, and regulators, are increasingly pushing for having standardized measurements provided as there is a strong trend towards comparability. It is explained that especially regulators push for transparency and comparability as a tool to increase the competition between the companies in the industry and as a result thereby create stronger pressure on each company to increase the sustainability effort to maintain industry leading. A3 did explain the same logic that the increased demand for transparency mainly is related to emissions from the

company, especially CO_2 emissions. They expect this trend of increased transparency to continue and expand to contain more than just data on emissions.

A key feature of having relevant KPIs mentioned by all the companies is that it helps to create a general awareness of sustainability throughout the company. A1 said that *"KPIs create incentives, and incentives create an awareness and desire to improve".* Both A1 and A2 have implemented sustainability as a specific section of the individual performance review for managers above a certain level in the company. This individual performance review is then the basis for the financial bonus reward. A3 has taken this a step further and integrated sustainability in all parts of the performance review. They explained that as they do not want to have sustainability as a separate topic but instead integrated in every single process, they have therefore integrated sustainability as a vital part of all the different evaluation areas in the performance review.

4.5 Success Factors & Common Barriers

During all the interviews key learnings and success factors for becoming environmental front-runners were discussed. This provided a clear picture of what the organization thought was their most important actions taken for becoming environmental front-runners and what advice they would provide for organizations that would like to increase their sustainability focus. Similarly, key challenges and barriers that they had encountered during their sustainability work were discussed which provided insights regarding potential challenges to bridge for future organizations interested to increase their sustainability focus.

4.5.1 Life Science

When the questions were raised regarding key barriers and main challenges the different life science companies had faced, one thing that was mentioned was the challenge of how to handle suppliers. For example, LS1 explained that their largest challenge was how to handle their suppliers and how to ensure that they are aligned with their higher sustainability focus. They also explained that regulations sometimes were a hindrance to their high sustainability goals. For example, it was mentioned that regulations sometimes required them to use materials that are unsustainable and therefore prevented them from being more sustainable. Similarly, LS2 did state that regulations sometimes were a hindrance for them and that the environment that they are present within sometimes slows down their initiatives. They also stated that there sometimes has been some internal resistance to the change and that establishing a large sustainability focus takes a lot of time. That it takes a lot of time to establish a large sustainability focus within firms is something that LS4 also emphasized as one of the main challenges they have faced. They also, similar to LS1, explained that they sometimes feel that regulations hinder them from implementing some of their sustainability initiatives. Moreover, LS4 described that it initially was a challenge to make people aware of how their large sustainability focus is helping the firm in general. Similar to LS1, LS3 specified that their largest challenge has been about how they should work with their suppliers and how to track, guide, and support them to align the suppliers with their own sustainability ambitions. LS5 described their largest challenge as the need for knowledge to become fact-based and how they should handle misinterpretations.

The final question that was asked to all the interviewees was what they saw as their key success factors and what they thought has been their most important learnings from their sustainability work. LS1 specified that their key success factor is their organizational structure that acts as a baseline for how they work with sustainability and that their CEO is highly passionate about sustainability. Another success factor they highlighted is the need for everyone in the company, on all levels, to work towards the same goal as well as the need for good internal communication about sustainability. LS2 described their key success factors as that their top management team is highly committed to their sustainability focus in combination with that the company has set ambitious goals. They also explained that communication and responsibility are two vital parts to succeed with their ambitious goals. LS3 defined their key success factors as having ownership and support from the top management team in combination with that they have clear and long-term goals that are degraded down in the organization which they then monitor and use as a base for improvement. LS4 explained their key learning as *"to establish a large sustainability focus within a company takes time, therefore our key learning is to start as early as possible"*. They also expressed the need for knowledge as a success factor to make good long-term decisions for a company. LS5 explained their key success factor as their constant use of the question *"what value are we creating?"* which they explained to move the focus from the process to what value they create. They also declared the importance of starting small and constantly improving and being clear to the organization about what they think is important and what the company should focus on.

4.5.2 Automotive

All interviewed companies within the automotive sector mentioned that having ambitious goals has proven to be a success factor and is a major key learning from the transition that the companies have gone through. All the companies did explain how sustainability has been integrated into the overall strategy and vision of the companies and by having ambitious targets they all stated that they are able to keep a high focus on sustainability, minimize the business risks related to changed sustainability requirements from external stakeholders and it sends a strong message towards the companies' partners that they are a long-term committed actor.

Moreover, all the companies stated several key learnings that are unique for each company. A1's key learnings are to integrate sustainability into the existing processes and strategies to avoid treating it as a separate topic. They did also underline the importance of having initiatives both from a top-down approach and a bottom-up approach as they argued that the different methods will result in different actions and that both these different methods will result in value-creating initiatives.

Lastly, A1 underlined the importance of having concrete and actionable KPIs to ensure measurability, comparison, and follow-up to be performed. A2 stated that their key learnings have been the importance of having a strong leadership commitment that can enable and sponsor sustainability initiatives to be developed and implemented by creating a fruitful environment. The importance of having a long-term vision is also underlined as they stated that most of the sustainability initiatives might have a negative or at least neutral short-term financial impact but might be crucial in the long run to ensure the continuous success of the firm. Lastly, A3 stated that it takes a lot of courage to stay industry-leading in sustainability as it might require major company changing

initiatives, new business models, and possibly a very long planning horizon to maintain and further develop the sustainability performance.

Furthermore, two of the companies stated that they are being inspired regarding how to work and improve sustainability initiatives by looking at companies from other industries. A3 stated that they are closely monitoring both other Swedish organizations but also mentioned several of the biggest tech companies as sources for inspiration. It is explained in the interviews that as the industries, and often the business models, are significantly different it is not possible to copy them straight off but rather that inspiration can be taken to initiate and develop new initiatives internally. They stated that by looking at several different industries with different key success factors it is believed that they can try to identify bits and pieces from all the different industries that can be of interest to adapt to the automotive industry.

5 Analysis & Discussion

The following chapter will consolidate the research from the interviews and highlight the major findings in relation to the two research questions the report addresses. The chapter will combine the insight from both the life science and automotive industry and the results will be related to previous research to highlight coherence or contradictions with what previously has been written about the topic. A discussion will also be held regarding the similarities and differences between the two industries.

5.1 Rationales of Being an Environmental Front-runner

The interview findings made it evident that there are two main paths from which the different rationales for being an environmental front-runner are originating. The rationales for becoming an environmental front-runner can either be driven internally by the company or externally by the environment. The internally driven rationales highlighted from the interview are presented in Figure 10 where six key drivers are presented. The first driver is economic benefits which imply that companies can gain positive financial results from their sustainability focus by for example being able to charge a price premium on their products. Another driver is company positioning which is to use environmental sustainability to position the company in the industry. Additionally, company reputation is highlighted as a driver which, through an extensive environmental focus, creates a good reputation of the company used to attract and retain employees, customers, and partners. Moreover, differential advantage regards drivers that enable companies to differentiate their offerings from their competitors resulting in a competitive advantage. Company resilience is for companies to prepare and create resilience for new regulations or similar environmental changes that potentially could harm the company. Finally, another internal driver emphasized in the interviews was contribution to the society which regards being responsible and trying to make the best for the society. Based on the identified internal rationales, it is concluded that the rationales are mainly focusing on improving the competitiveness of the company by either gaining a cost advantage, sales advantage, improved brand reputation or especially becoming a more attractive workplace.

Figure 10
The identified internally driven rationales for being an environmental front-runner

Contrary, it is seen that the rationales that are externally driven are more focused on creating benefits and value for the society and are not designed specifically for the individual company. The externally driven rationales identified from the interviews are presented in Figure 11, and regard external stakeholders that put pressure on the company, or the whole industry, to become more sustainable. These external pressures can create market opportunities to be utilized to create long-term beneficial opportunities for the individual company as stated by Lowitt (2011). The externally driven rationales include regulations that force or incentivize firms to have a forefront sustainability approach. The external drivers can also originate from customers that demand certain sustainability actions or performances from the company to be their customers. Moreover, investors are identified as an external driver as they can put requirements on firms for the firms to access capital meant for financing environmentally forefront companies. Finally, the social expectations are also identified as an important external driver for companies to establish an environmental forefront position where the society demands and favors environmentally forefront companies.

Figure 11
The identified externally driven rationales for being an environmental front-runner

Based on the interviews it is evident that the companies are influenced by both internal and external drivers. Moreover, it is seen that the industry-leading companies are taking their different stakeholders into consideration when developing the sustainability strategy which goes in line with the arguments from Placet et al. (2005) saying that a key success factor is to consider the different perspectives from all different stakeholders. However, based on the conducted interviews, certain differences between the automotive and life science companies can be seen. Firstly, the life science companies are mainly focusing on the risk-minimizing aspect of being an environmental leader and how the reputation will be positively enhanced by being a leader within sustainability. The automotive companies on the other hand show a higher focus on the financial and profitability benefits that they can monetize from. Based on the interviews it can be concluded that the automotive companies have better opportunities to earn a short-term profit by being able to have a premium pricing due to their sustainability performance. It is likely that they can more efficiently communicate and share the value of sustainability to their customers which thereby explains why they are more focused on the profitability rationales. This goes in line with the arguments brought up by the life science industry expert who stated that

sustainability never will be the main driving factor in life science as the patient's health and well-being always will be prioritized even if it is done at the expense of the environment. Contrary, it is seen in the automotive industry that they can have sustainability as the main priority in new development projects which might explain why they are better to monetize on the initiatives taken.

Moreover, it is seen that several of the rationales of becoming an environmental front-runner are being created externally and pushed into the company by external stakeholders, such as regulators, customers, and investors. A strong driver for sustainability leadership, mentioned by companies from both industries, is the investors that are increasingly putting pressure on sustainability performance and sustainability reporting. Moreover, regulations and externally defined processes are also impacting the sustainability strategy of the interviewed companies. However, it is seen that the rationales originating from the external stakeholders are more directed towards having reactive responses from the companies.

Following the arguments by Kim (2018), it is seen that all the interviewed companies as a general strategy try to have a proactive approach as this is claimed to minimize the long-term business risks. Kim (2018) states that the main rationale for having a proactive strategy is that it enables the companies to minimize operating costs. However, the analysis shows that the rationale for being proactive rather is to decrease the dependency on external stakeholders and to avoid being impacted by suddenly changed requirements and market moods. In other words, this would imply that a proactive approach is targeted to minimize the long-term business risks by being able to influence and drive the external decision-making, e.g., regulations, in a direction that would suit the business model of the own company.

Based on the arguments above, it is seen from the interviews that the automotive industry fulfills the drivers to a higher extent, and thereby has come longer in the sustainability transition. Therefore, the automotive industry has been able to integrate sustainability more efficiently into the core business. As seen in the sustainable development maturity levels developed by Adamczak et al. (2019) they conclude that there are five different maturity levels of sustainability starting with the ignoring phase, and then defining, adapting, managing, and lastly integrating. It is evident that all the interviewed companies from both industries have come far beyond level 1 and 2 as they are all working actively with sustainability.

Moreover, it is stated in the interviews that all the life science and automotive companies have implemented clear KPIs to track and measure their performance which is stated to be done in maturity level 3, Adapting, in the model developed by Adamczak et al. (2019). In the model for the adapting level, the authors state that the overarching goals of the organization are highly related to the usage of resources, and the goals are spread throughout several departments. This is clearly achieved by the automotive companies as they are all stating that resource efficiency is a key priority in their sustainability work and a main driver of it.

However, it is not as evident in the life science industry, even though they are undoubtedly spreading the sustainability goals throughout the whole company. Despite that, it is not straightforward to claim that they are having overarching goals that are highly related to the usage of resources. As discussed above the main purpose of life science companies has been, and will be, to ensure the health and well-being of the

patients, even though it might be at the expense of the environment as mentioned in the interview with the life science industry organization. This means that even though sustainability can be a key priority for life science companies it will most likely never be seen as the single driving factor but rather as a supporting factor to reach the overall goals as illustrated in Figure 12.

Figure 12

Illustration of how environmental performance might be the main driver of new product development within the automotive industry and only as a supportive driver in the life science industry
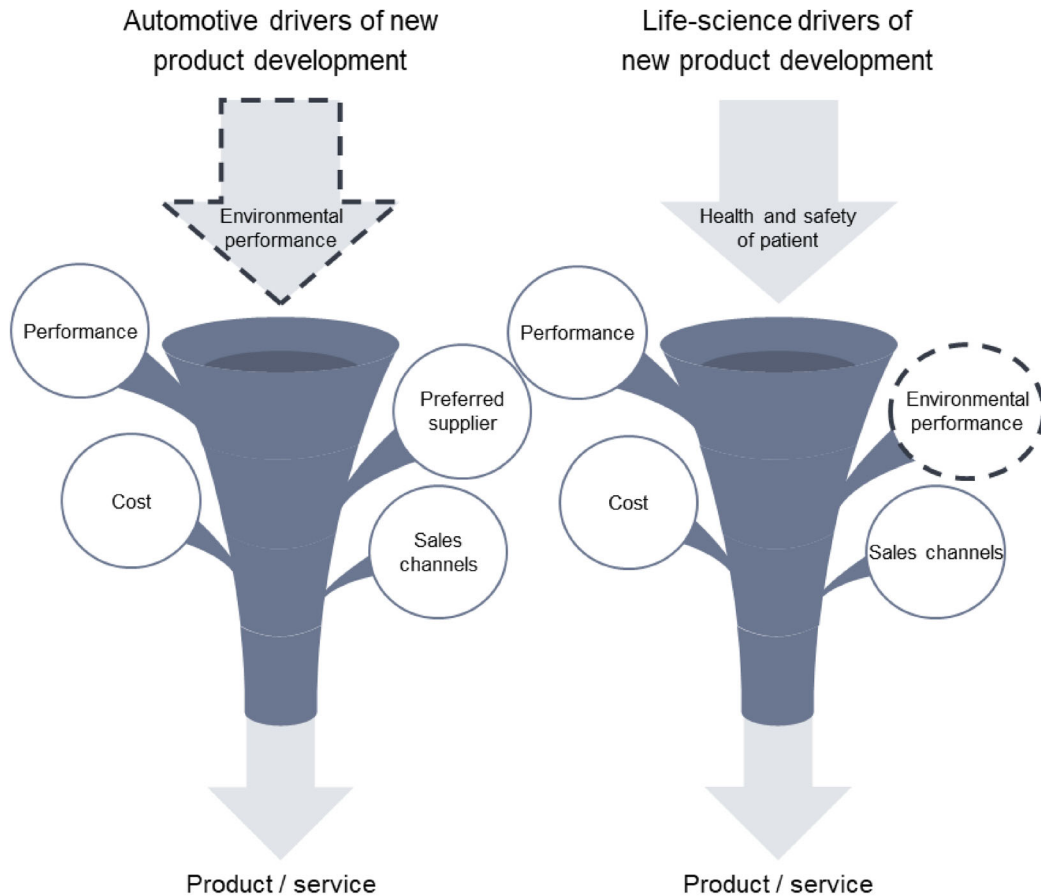
Note: The figure illustrates examples of drivers meant to illustrate the difference between the industries

When applying the sustainability maturity development model by Adamczak et al. (2019) to the companies in the automotive industry it can be seen that they are fulfilling the managing level criteria by implementing best practices, striving for continuous improvement, and that sustainability is an important driver in the new product development and the overall management of the company. Moreover, it can be seen that the integrating level criteria is partially fulfilled in the automotive sector. It is evident from the interviews that sustainability goals are driving the company strategy and that new technology is utilized to improve sustainability performance. However, it was also clear from all the companies that the biggest area of improvement is how to

work with and partner with the rest of the supply chain to maximize the value creation and leverage the sustainability initiatives together.

However, even though it seems as if the automotive companies have managed to reach a higher maturity level according to the definition by Adamczak et al. (2019) it is seen from the interviews that the life science companies, in general, are more focused on achieving a higher purpose with their sustainability initiatives. Statements like *"we must do it, we can do it, and we want to do it"*, *"We want to be a fair player for the society"* and *"We define sustainability as creating shared value for the sustainability"* show that the purpose of being sustainability leaders is not solely linked to the performance of the company but also to a desire to support and develop the society. Contrary, none of the automotive companies emphasize the desire to do good for society as strongly as the life science companies did. If applying the pyramid of CSR maturity levels by Carroll (2016), it is noticeable that the life science companies have reached level 4, to do good for society, as they are all expressing the philanthropic purposes as described by the author. On the other hand, as mentioned above, the automotive companies are not highlighting the philanthropic responsibilities as a main driver and rationale for being an environmental front-runner. They are rather fulfilling the level 2 criteria, to comply with laws and regulations, and to some extent the level 3 criteria, which is to do what is right and fair for the society.

To conclude, firstly it can be argued that the industry maturity level has come to different levels in different areas for the two different industries. Firstly, it is seen that the automotive industry undoubtedly is more developed and that the sustainability leading automotive companies have been more efficient and have rooted sustainability deeper within the organization compared to the companies in the life science industry. Moreover, it is seen that the automotive companies have managed to communicate the value of being sustainable and have therefore been able to monetize on the premium profits that have been created.

Secondly, if looking at the purpose of being environmental front-runners it is clear that the life science companies have been able to implement a higher purpose compared to the automotive companies. They are clearly more driven by the desire to do good for society rather than earning short-term profits from their initiatives. An explanation for this difference might be that the overall basis of the life science company's operations is to help their customers or patients to a better and healthier life. This is according to the analysis closely related to supporting society to a more sustainable future and might explain why these companies have proven to be very successful in integrating a higher purpose-driven business model. In the automotive industry where the basis of the automotive industry is to give access to transporting solutions which in its foundation is not closely related to creating a more sustainable society and this might be a reason why automotive companies have not been as successful to implement and establish a higher purpose-driven business model.

Thirdly, comparing the overall finding to the literature, it is clear that the findings are aligned with what the literature states as rationales for being an environmental front-runner. For example, the findings are aligned with that the front-runners are achieving high maturity levels in both Adamczak et al. (2019) and Carroll (2016) models of how to define what drives forefront sustainability focus of environmental front-runners. Moreover, the findings are also verifying the rationales of e.g., Kim (2018) who states that a forefront sustainability approach minimizes the company's business risk.

5.2 Success Factors to Become an Environmental Front-Runner

Based on the interviews, several key actions within setting up a forefront sustainability approach within a firm were highlighted. These actions have been consolidated into nine key activities divided into three key phases, as illustrated in Figure 13. From the interviews, it is evident that the phases usually are realized in order where most companies start from the middle and as they mature and develop expands the scope to a wider segment. However, from the results, it is clear that companies often see the actions in the middle of the Figure as a baseline for succeeding in becoming an environmental leader while the actions to the edges often are stated to be the next step companies aim to improve within to become even more sustainable. The nine key activities are categorized into three overarching phases, Strategy, Internal integration, and External integration, all of them having supporting activities that assist the companies in the transition to becoming an environmental front-runner. Additionally, the process is subject to different degrees of scope for the sustainability initiatives, i.e., the first phase, Strategy, is to a large extent related to the core of the company and specific activities in the top management team. The second phase, Internal integration, has a significantly wider focus where it includes the whole firm and how to create an organization that is aligned with the company's strategy, which is highly dependent on sustainability commitments. The final phase, External integration, broadens the scope to the whole supply chain and in the ultimate case, the whole ecosystem that the organization is present within.

Figure 13
Framework consisting of key success factors to become an environmental front-runner

Ecosystem view

Scope

Company core

External Integration

Internal Integration

Strategy

Key activities

Supporting activities

- Increase the ecosystem view e.g., partners etc.
- Extend supplier integration to increase scope 3 focus

- Relate KPIs to actions and break them down to functions
- Break down targets to clear and actionable KPIs
- Integrate sustainability into functions
- Establish sustainability team

- Set sustainability targets
- Integrate sustainability in strategy
- Top management commitment

- Relationship and support from key stakeholders in the ecosystem
- Coherent, measurable, and comparable KPIs

- Internal communication
- Trainings and workshops
- Incentive structure

- Guidance and support from investors

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5.2.1 Strategy

The first set of activities regards the strategic view of sustainability where all interviewees highlighted the need for commitment from either the CEO and the top management as well as to have an integrated view of the general business strategy and the company's sustainability approach. Having strong commitment from the executive decision-makers in the company was argued to be a key success factor for the companies, which can be related to several benefits following a strong commitment from the executive decision-makers. Partly it is argued that a strong commitment from the top enables sufficient resources for sustainability initiatives, both in terms of human resources that can work with sustainability, but also in terms of financial resources. Moreover, some interviewees also stated that a strong commitment from the top was enabling vital decision-making to reshape the organization towards an increased sustainability focus. Additionally, top management commitment will also create legitimacy for sustainability initiatives as well as highlight the importance of sustainability within the companies.

The success factor of having commitment from the executive decision-makers in the firm is something that also is emphasized by Lunenburg (2010) who stresses the need for change agents within transformation processes where he argues that the success of these change agents is highly related to their relationship towards the key decision-makers within firms. Moreover, in Kotter's transformation model, described by Cummings et al. (2016), the first step regards making the organization aware of why change is needed, which again stresses the importance for leaders to show the direction of the firm.

The second step that is digested from the result is the need for an integrated strategic view of sustainability, i.e., there should not be any separate sustainability strategy, rather, the company's business strategy should integrate the sustainability focus. From the interviews, it is evident that having an integrated strategic approach toward sustainability is important to minimize the problems with conflicting strategies and the risk that sustainability is becoming an add-on rather than a core part of the firm. This importance of having a common vision and strategy in the organization is aligned with what Dechant and Altman (1994) explain as a best practice in establishing environmental leadership.

Moreover, several firms also highlighted the concept of shared value which they explained as their quest to create value on several levels simultaneously e.g., both create financial benefits while being sustainable. A similar approach towards the concept of shared value is discussed by Porter and Kramer (2019) who argue that shared value is to find ways to simultaneously create economic and societal value where they also state that shared value can be used as a new way for companies to think about strategies. Additionally, Lowitt (2011) discusses the high sustainability maturity of firms that have integrated sustainability into their core business strategy, which also implies that the interviewed companies are highly mature regarding their sustainability approach.

Moreover, Cummings et al. (2016) explain that the third step in Kotter's transformation framework is to establish a common vision within the company which confirms the arguments that a common integrated sustainability strategy is needed to align the organization and deliver a common vision to the organization. Moreover, during this strategic phase, it is also concluded that investors can act as a support for the company

both by supporting the top management team in their sustainability commitment and in setting up a suitable integrated sustainability strategy.

Moreover, another vital part that can be related to the strategic phase of establishing an environmental leadership is to set high and ambitious targets that are aligned with the sustainability strategy. Several interviews did highlight setting targets as crucial action for facilitating the firm's sustainability focus and to both externally and internally communicate what the company strives to achieve which is in line with Chirico & Hristov (2019) who argues that targets are a way to translate the strategy into actionable goals. However, it is also clear from the interviews that the usage of ambitious targets is a way to communicate about the strategy. Some interviewees mentioned that the process of setting targets did create a sense of urgency in the company to start increasing the sustainability focus which also is in line with Kotter's (2007) first step to establish a sense of urgency to facilitate a transition.

What is striking is also the similarity between both the industries regarding these first two steps of top management commitment and having an integrated sustainability strategy as both industries equally stressed the importance of these two initiatives. Additionally, all companies expressed a high degree of maturity within both steps where all companies had a high commitment from their top management as well as that they all had integrated sustainability and business strategy. It can therefore be concluded that these two steps clearly are key success factors for becoming environmental front-runners.

5.2.2 Internal Integration

The next phase of actions highlighted in the interviews regards how to integrate the sustainability focus within the whole firm, and how to make everyone responsible for the company's extensive sustainability focus. Integrating the whole organization and creating awareness within the organization to become an environmental front-runner has been highlighted by the interviewed organizations and is aligned with Lloret's (2016) arguments that constant awareness within organizations is needed to achieve competitive advantage from superior sustainability performance. One of the first key activities that can be concluded from the interviews as a way for creating awareness within the organization is to set up an organizational structure that supports the firm's sustainability focus. It is evident from the interviews that this organizational structure often is based on that a new small function is set up in the firms that have the responsibility for driving the operative sustainability work. This team usually has strong connections either directly to the CEO or to the top management team which enables the team to both be able to get the right resources and build legitimacy for the team. This implies that the sustainability function is guarded by the executive decision-makers to ensure a high sustainability focus and avoid traditional structures conquering the sustainability team.

Moreover, from the interviewees, it is evident that the following activity is to integrate sustainability within the firm with the ambition to create an organization that autonomously works towards and embraces sustainability, see Figure 14. This way of setting up an organization in favor of sustainability, as illustrated in the figure, is aligned with the concept of ambidextrous organizations explained by O'Reilly and Tushman (2004) as having separate organizational units for handling the current business and the emergent business. However, the large difference between how the

interviewed companies did set up their organizations and how O'Reilly and Tushman (2004) explain it is that the interviewed companies have a separate unit to give them legitimacy and resources but that their goal was to implement the sustainability focus in the whole organization. In the explanation by O'Reilly and Tushman (2004) the aim of the separate unit is to work in their silo separately from the other organization to avoid conflicting interests between the exploratory and exploitatory unit. Hence, it can be concluded that the way the interviewed companies set up their sustainability units is similar to ambidextrous organizations in terms of embracing the emergent ideas, which in this case regards sustainability while the traditional theory regards innovation. This way of using ambidextrous organizations to handle tensions and allocate resources between the company's sustainability focus and its traditional focus is in line with how both Hahn et al. (2016) and Du et al. (2013) argue the concept of ambidextrous organizations is can be used to structure an organization to in a good way to work with sustainability.

Figure 14
How companies organize for sustainability

Additionally, one key action to create a common understanding and awareness within the organization is the usage of sustainability KPIs which goes in line with the arguments from Zarzycka and Krasodomska (2021). These KPIs are expressed by the interviewees to be of high importance for the firms where the first step is to break down the overall goal for the firm into smaller sustainability KPIs that can be used to monitor the firm's sustainability progress. However, this is also a major challenge for firms as the KPIs need to be chosen to track the right things regarding sustainability and that they should be actionable as well as that improvement of the KPIs lead to improvements in sustainability. This challenge of choosing the right KPIs further underlines the difficulties mentioned by Zarzycka and Krasodomska (2021) of comparing KPIs as it seems like different companies are choosing different KPIs which makes the comparison challenging.

Additionally, a few of the interviews meant that the best types of sustainability KPIs are those that also directly improve the business in general. Hence, to have KPIs that embrace shared values to improve both the firm and create sustainable value for the society. From the interviews, it is also implied that the extension of the use of KPIs is to further break them down to the specific functions in the organization which results in the functions being more autonomous in their work by being able to make their own decisions to fulfill the KPIs. This way of handing over responsibilities in combination with KPIs to the organization increases the alignment of the organization to work

towards the same goals. The KPIs are an important tool to further improve the sustainability work within the organizations as one key in sustainability improvements is that an organization should plan how they should improve, do it and measure the results to improve based on the results.

Within the phase of internal integration, some of the interviews highlighted several activities that had been conducted that can be seen as support functions to create awareness. One thing mentioned is the importance of internal communication which regards communication of the company's vision and to a greater extent including the whole company in the sustainability efforts as well as to convey the importance of sustainability. The way that the interviews highlighted internal communication as part of their way to improve awareness is fully aligned with Kotter's (2007) fourth step that regards communicating the new vision to the organization using several different channels to ensure that the message is conveyed to everyone. Another activity mentioned in the interviews to support organizational sustainability awareness is for companies to have processes for finding and embracing sustainability enthusiasts to optimize the bottom-up sustainability forces within organizations. Additionally, to extend the internal organizational initiatives, training and sustainability workshops are highlighted as supporting activities to both create an increased understanding and knowledge to increase the initiatives originating within the organization. Furthermore, another supporting function to increase the organizational awareness and internal drive is to use personal incentive structures both to create motivation as well as to further the importance of the topic and clearly communicate what is expected from the individual. This way of rewarding small wins is also emphasized by Kotter's (2007) to support the transformation process.

Comparing the life science and automotive industries it is evident from the interviews that there are some differences regarding how mature the industries are within each step. One of the largest differences in the usage of KPIs is that the automotive industry is highly mature in how to set up and use KPIs to track, measure, and break them down to all functions. This way of working with the KPIs to delegate responsibility regarding a certain KPI enables decision-making directly in the functions that are aligned with the company's sustainability goals all over the organization. The life science industry does not to the same extent showcase the same level of maturity regarding usage of KPIs where the KPIs to a higher extent only are used to monitor the company's sustainability performance.

5.2.3 External Integration

The third layer of actions expressed by the interviewees, regarding how they strive to work with sustainability to be environmentally front-runners, is to extend the scope from the company itself to consider partners both upstream and downstream in the value chain, which also is highlighted as a best practice for environmental front-runners by Dechant and Altman (1994). The first step that can be concluded from the interviews consists of increasing the supplier integration to extend the scope 3 focus, which implies that the organization extends their sustainability focus from just optimizing their own organization, to also optimizing their value chain footprint in terms of suppliers. There are in general two distinct ways the interviewed organizations work with their suppliers, partly through different requirements that the suppliers must fulfill, and partly through collaborating with their suppliers to help them become more sustainable. From the interviews, it is also clear that the first and easiest step is to steer suppliers through

different minimum requirements that must be fulfilled but that the goal is to become better at working together with key suppliers. However, increasing the work with the supplier is also by several interviews stated to be a key challenge closely related to the challenge of measuring scope 3 emissions, which implies that the organization must be able to measure their suppliers which can be challenging if the process is not standardized.

The final activity that can be digested from the interviews is to extend the sustainability scope to include the whole ecosystem that the organization is present within, regarding both suppliers and customers, as well as other actors and stakeholders present within the industry. The aim of this step is to optimize from an ecosystem perspective instead of optimizing every single operation or each company in isolation where it is argued to create an increased total value in the ecosystem. Hence, regarding the whole ecosystem from a sustainability perspective enables companies to find synergic effects which create a larger amount of value when working together rather than optimizing each company in isolation. This way of including the whole ecosystem from a sustainability perspective is fully aligned with the arguments brought up by Porter and Kramer (2019) that discuss the concept of shared value to be able to create a larger amount of value when finding synergies and optimums from a larger value chain perspective than from optimizing every single unit in isolation. This way of thinking is illustrated as being the top goal from a sustainability and value perspective as this way of analyzing the ecosystem finds the most optimal value creation action but where the problem instead leads to how to divide the value between the actors that are part of the action.

Moreover, following the arguments from Porter and Kramer (2019) it is clear from the interviews that the ultimate target should be to optimize the sustainability actions from an ecosystem view. However, it is clear that this is a stage not achieved by the companies in the study as they are still trying to expand the scope to include their closest related actors, such as their direct customers and suppliers. Although this stage is not reached yet, the analysis of this study shows that this most likely will be achieved in the future and by doing so, leverage the results of the sustainability work.

Even though it is clear there are few initiatives aimed at the final step to include and optimize sustainability from an ecosystem perspective. The results indicate that the interviewed companies have a high focus on the suppliers and improve their scope 3 emissions where it also is clear that the automotive industry has a higher maturity regarding how they work with their suppliers. The automotive sector is to a higher extent collaborating with its suppliers to find ways to improve sustainability and at the same time is better at measuring sustainability from a supply chain perspective, while the life science industry does not to the same extent collaborate with its suppliers. One part of the answer to why the automotive industry is more mature regarding how they work with their suppliers may be the support functions in terms of greater relationship and support from their stakeholders in the ecosystem, as well as the usage of coherent, measurable, and comparable KPIs which from the interview are highlighted as an important support function to successfully extend the company's sustainability scope.

6 Conclusion

The purpose of the report was to investigate industry-specific best practices for how large environmentally leading firms have established their position as environmental front-runners. The purpose was fulfilled by answering the two research questions regarding why environmental front-runners have chosen to establish themselves in a position as environmental leaders in their industry, and how environmental front-runners have incorporated sustainability in their business to create value from the sustainability focus.

The conducted research concludes that both external and internal forces are impacting the decision to position the company as an environmental leader. However, it is evident that the internal rationales to a larger extent, promote proactive actions which have proven to be stronger drivers for the companies behind the decision of being an environmental front-runner. The findings of the research shows that the maturity level is not a linear process as proposed by Carrol (2016) and Adamczak et al. (2019). Rather it is concluded that the maturity of business is highly dependent on the industry and the unique value drivers of that industry. Moreover, it is seen that the environmental front-runners are highly proactive regarding their sustainability approach, therefore the importance and impacts from the external drivers tend to be lower as the external drivers are more focused on encouraging reactive actions from the companies.

Furthermore, it is concluded that three main areas are targeted by companies to establish a leading sustainability position. The core area identified regards strategic sustainability thinking. It is evident that integrating the sustainability focus into the company's core strategy, in combination with ambitious goals and strong commitment from the executive management team, is of great importance to enable the company's sustainability focus to be developed and established in the company. To further develop the sustainability performance of the company, the company's sustainability focus should be integrated into the whole organization. It is concluded that by having clear and actionable targets and an organizational structure tailored for sustainability, organizational alignment is achieved that supports the company's environmental focus. To further improve the sustainability performance, the focus should be expanded to include the surrounding ecosystem to create shared value and make a significant contribution to the ecosystem. However, this final area of external integration is highly complex and even for the leading environmental companies much is still yet to be done to establish a consistent and successful external sustainability approach that includes the whole ecosystem.

These areas, in terms of achieving a high strategic sustainability maturity, internally integrate the organization, and externally integrate the surrounding ecosystem in the strategic focus, are an extension to the literature explaining how to successfully work with sustainability where this study is aligned with, but also furthers the sustainability models and considerations proposed by e.g., Lowitt (2011) who have created a model of key steps working with sustainability, Porter and Kramer (2019) who emphasize the notion of creating shared values, and Dechant and Altman (1994) who discusses key practices that environmental leaders do. Moreover, this research does also combine these strategic models and considerations with change management theories creating a consolidated framework for how organization have transformed into environmental

front-runners that both regards sustainability specific, and transformation specific theories.

One aim of the report was to establish industry-specific best practices. However, the general process of how companies have established environmental leadership within the life science and automotive industry are highly similar, and the results between companies and between the two industries are consistent. On the other hand, the activities need to be tailored and adapted to each specific company to maximize that value from the environmental actions. However, there are also some differences between the two industries regarding some specific areas where the automotive sector in general indicates a higher maturity regarding how they work with measurement of their sustainability performance by clearly creating actionable strategies based on KPIs. Moreover, the research shows that the economic benefits are more visible within the automotive industry, and it has been clear that they have reached a higher maturity level in terms of communicating and justifying an increased customer value by offering more environmentally sustainable products. On the contrary, the companies from the life science industry are to a higher extent focusing on the societal benefits that they create and are targeting a higher purpose with their environmental initiatives.

This study has resulted in the identification of key rationales for why, and best practices for how, environmental front-runners in the life science and automotive industry have established their positions as environmental front-runners. However, even if the results between the companies and the two industries are consistent, it cannot be confirmed that the findings are generalizable and applicable for other industries. Therefore, further research is needed regarding key rationales and best practices for environmental front-runners in other industries to investigate whether the same findings are present for other industries as well. Additionally, the study has identified why and how the environmental front-runners are working with sustainability, but the study has not investigated how other companies that are not considered to be environmentally front-runners are working with sustainability, hence the report cannot determine to what extent the usage of the identified best practices will result in an improved sustainability performance. Therefore, further research is needed regarding how a random sample of companies are working with sustainability and an identification of which companies are better than others, which thereby would make it possible to identify differences in the environmental approach between more and less environmentally successful companies.

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