Scaling up sustainability-oriented innovation
Case examples of startups collaborating with large companies

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Abstract

Background: Acknowledging the responsibilities assigned to business within the context of sustainable development, a growing number of companies is set up in order to innovatively address environmental problems or societal needs. Collaborations with large companies are thereby one way of scaling up the impact of these startups’ sustainability-oriented innovations. However, collaborations between two actors that are so different from each other are also challenging. If the aim of a collaboration between a startup and a large corporation is the upscaling of a sustainability-oriented innovation, the success of this collaboration is not only in the interest of the two involved actors, but can be said to be a concern to society as a whole.

Aim: The aim of this research is to answer the questions of how collaborations with large companies contribute to the upscaling ambitions of sustainability-oriented startups and to explore the kind of challenges which are encountered during such collaborations. Contrary to most studies in this area, this thesis adopts a startup perspective on the issue, exploring the subjective meanings attached to the process of collaboration by the startups.

Methodology: A multiple case study strategy was used to explore the issue of corporation-startup collaborations. Qualitative data was collected using semi-structured in-depth interviews, and company and industry reports. Given its exploratory character, the findings of this research are forming a basis for further, more conclusive research.

Key findings: Sustainability-oriented startups benefit from collaborations with large companies in several ways. Apart from providing financial capital, large corporations are able to offer expertise, the possibility to network, legitimacy in the eyes of actors such as investors or customers, and inspiration regarding the improvement of the startups’ innovative solutions and/or business models. Main challenges as experienced by sustainability-oriented startups concern the establishment of contact, differences in the availability of resources, the possible dependence on the large corporate partner, and implications resulting from differences regarding the perception of and relevance attached to sustainability matters.

Keywords: sustainability, sustainable development, sustainability-oriented innovation, collaboration, upscaling, startup
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I Introduction

I.1 Background

Our society is confronted with a multitude of complex and interrelated problems which, to name some examples, include global warming, biodiversity loss, poverty, and corruption. Addressing these issues successfully is said to require collaboration between individuals, educational institutions, governments, non-profit organisations, communities, and business (Gajda, 2004, p.67). Especially the role of business is being defined more broadly, which means that companies are increasingly expected to assume a responsibility that goes beyond compliance with existing law and beyond purely economic considerations (Warhurst, 2005, p.152). The extended definition of the role and responsibilities of business is thereby embedded in a broadened understanding of development, initially inspired by the United Nation’s World Commission on Environment and Development in 1987, also known as the Brundtland Commission, and the Earth Summit in Rio de Janeiro in 1992 (Warhurst, 2005, p.153). In the course of these conferences, the term “sustainable development” was coined to describe a development that goes beyond economic growth to also include environmental and social goals.

Acknowledging the responsibilities assigned to business within the context of sustainable development, a growing number of companies is set up by individuals or groups of individuals in order to innovatively address environmental problems or societal needs. This particular kind of young businesses, generally referred to as startups, usually challenges the solutions provided by large, well established companies by proposing new products, services, or processes which aim to solve environmental or social problems (Schaltegger and Wagner, 2011, p.223). However, the impact of these startups’ novel solutions tends “to be localised and small scale” (Amin et al., 2002, cited in Lyon and Fernandez, 2012, p.64). Thus, innovative ideas with the potential to create considerable value for society or to significantly reduce negative environmental impacts do not have enough influence to truly make a difference. Dees et al. (2002, cited in Lyon and Fernandez, 2012, p.64) therefore point out that a major challenge for startups is “how to scale up their impact beyond small successful projects”. Scaling up these startups’ sustainability-oriented innovations means to take the number of beneficiaries into account, as well
as the quality of the service or product (Lee and Restrepo, 2015, p.462). Westley et al. (2014) understand scaling up as “an organization’s efforts to replicate and disseminate its programs, products, ideas, or innovative approaches” (p.237). In simple terms, scaling up describes an organization’s attempts of affecting “more people and cover a larger geographic area” (Westley et al., 2014, p.237).

As mentioned in the beginning, collaboration is considered to be important for sustainable development in general. Lee and Restrepo (2015, p.463) point out that collaboration also constitutes an important component for scaling up sustainability-oriented innovations in particular. Thus, collaboration can be said to also constitute an important aspect regarding a sustainability-oriented startup's upscaling ambitions. Thereby, not only interfirm collaborations with other companies large or small, but also collaborations with governmental actors or non-profit organisations are assumed to be possible ways of fostering sustainability-oriented innovations and the startups behind them. However, adopting a startup perspective, this research will focus on collaborations between startups and large corporations in Sweden and Germany, using a multiple case study approach.

1.2 Problem formulation and research question

It can be argued that collaborating with experienced corporations generally can provide a number of benefits for startups that cannot be offered by most governmental actors or non-profit organisations. Through companies that are competing successfully in the marketplace on a large scale for many years, startups can, for example, gain access to these companies’ networks (Weiblen and Chesbrough, 2015, p.70). This can mark an important step away from having only a localised and small scale impact towards reaching mass markets. However, collaborations between two actors that are different from each other in many aspects are also challenging and do not always lead to a fruitful outcome (Weiblen and Chesbrough, 2015, p.66). If the aim of a collaboration between a startup and a large corporation is the upscaling of a sustainability-oriented innovation, the success of this collaboration is not only in the interest of the two involved actors, but can be said to be a concern to society as a whole. These considerations stress the importance of why collaborations between sustainability-oriented startups and large corporations are worth to be examined in order to gain a better understanding of the
dynamics of such collaborations. However, the body of research on this particular kind of collaboration is limited. In addition to that, the corporate perspective is clearly dominating the literature dealing with the issue of corporation-startup collaborations in general. Hence, the startups’ experiences concerning such collaborations are underrepresented.

This research is motivated by the conviction that insights into the startups’ perceptions of the collaborations could deliver valuable information, but mainly momentum for further research on how such collaborations can be managed to produce beneficial outcomes for both of the participating companies and society as a whole. The intention of this research project is to contribute to the research field of sustainable development in general and the area of collaboration for sustainability in particular by exploring the perspectives of sustainability-oriented startups on collaborations with large corporations. The following questions will guide the research:

*In what way can collaborations with large companies contribute to the upscaling ambitions of sustainability-oriented startups? What kind of challenges are encountered when collaborating with large companies?*
2 Theoretical background

2.1 Sustainable development

Since the concept of sustainable development marks the wider theoretical background of this research, a clarification of how the term is understood and used throughout this paper is required. The terms “sustainable development” and “sustainability” are often used interchangeably, but it is important to distinguish between them. One way of doing so is to define sustainability as the condition marking the endpoint of the process of sustainable development (Schaltegger and Burrit, 2005, p.185; Michelsen and Adomßent, 2014, p.13). Apart from being considered a condition, sustainability can also be described as an ability or capacity, namely as “the capacity for continuance more or less indefinitely into the future” (Boersema et al., 2010, p.195). This capacity for continuance is threatened by our current ways of life, which are increasingly putting pressure on the natural environment’s ability to offset the impacts of human activity. In order to stop this trend, a development that is sustainable is needed. Determining which development is sustainable and which is not, is thereby not an easy task, as illustrated by the large number of definitions (Steurer, 2001, p.537). However, according to Schaltegger and Burrit (2005, p.186), the basic message of most of the definitions describes sustainable development as development that aims at establishing a “peaceful society with social equity and justice and economic prosperity in a clean, natural environment.” This conceptualisation highlights three interdependent dimensions which are sometimes referred to as the three pillars of sustainability (e.g. Hansmann et al., 2012; Duć et al., 2015): society, economy, and environment. A variety of problems exist within each of these dimensions, including for example widespread hunger and poverty, gender and income inequality, deforestation, and biodiversity loss. Thereby, companies “are considered by many to be the main players creating environmental and social problems and thus to be the source of a lack of sustainability in society” (Schaltegger and Wagner, 2011, p.222).

2.2 Sustainability-oriented innovation

Apart from being considered a main source of sustainability problems, companies are also seen as “core drivers of sustainable development” by shaping markets and society through innovations (Schaltegger and Wagner, 2011, p.223). Regarding the
issue of innovation in the context of sustainable development, a “myriad of competing terms has emerged”, including for example sustainability innovation, sustainable innovation, and sustainability-related innovation (Hansen and Klewitz, 2012, p.257). However, in line with Hansen and Klewitz (2012), the term sustainability-oriented innovation is considered to be best suited to describe the types of innovations that aim towards the goal of sustainability. This designation conceptualises sustainability-oriented innovation as a process and acknowledges that it is “the management of a ‘direction’ (i.e. products or services are more sustainable than earlier versions) rather than the arrival at a final destination (i.e. a truly sustainable product)” (Hansen and Klewitz, 2012, p.257). According to Westley et al. (2014, p.235), social innovation arises “when an individual or group of individuals identifies a societal need and responds creatively with a novel solution”. For the purpose of this research, the definition is extended to include also innovations targeted at environmental issues. Hence, when using the term sustainability-oriented innovation, novel solutions developed by an individual or a group of individuals in response to a societal need or environmental problem are meant. These novel solutions include not only products and services, but also processes and organisational models, as suggested by Schaltegger and Wagner (2011, p.223). Currently, corporate innovation activities are predominantly directed at improving efficiency, in most cases concerning the efficient use of natural capital (Hansen and Klewitz, 2012; Young and Tilley, 2006; Dyllick and Hockerts, 2002). It is argued, however, that innovation can and should also address other criteria, namely effectiveness, sufficiency, and ecological equity (Young and Tilley, 2006; Dyllick and Hockerts, 2002). An example for an innovation directed at increasing effectivity is the closed loop-production system called “Cradle to Cradle” suggested by McDonough and Braungart (Young and Tilley, 2006). The concept of sufficiency emerged out of the realisation that reducing the absolute level of consumption is an important factor, too (Dyllick and Hockerts, 2002). Even though sufficiency is considered by some to be an issue of individual choice, corporate innovation activities can address sufficiency by developing for example more service-intensive goods or by becoming a solution provider (Hansen and Klewitz, 2012, p.257; Dyllick and Hockerts, 2002, p.137). The fourth criterion, ecological equity, refers to the socially just consumption of natural capital, both within and
between generations (Hansen and Klewitz, 2012, p.256). Designing value chains for biofuels without interfering with food production would be one example of how corporate innovation activities can address ecological equity (Hansen and Klewitz, 2012, p.257).

It has to be mentioned, that sustainability-oriented innovation not only emerges in the context of new business creations, but also within existing corporate structures. The focus of this thesis, however, lies on sustainability-oriented innovation occurring in connection with the creation of a new company, subsequently referred to as a sustainability-oriented startup. In general, not every newly established business is automatically a startup. Throughout this thesis, and in line with the definition provided by Hahn (2014, p.4), only new ventures with innovative potential and a scalable business model are labelled startups. Thereby, the startups’ experiences with large corporations are examined retrospectively. This means that the startups’ respective upscaling process from its origins to the present is considered, with special attention paid to the collaborations with large companies. Large companies can thereby be defined in terms of employee numbers or turnover. As specified, for example, by the European Commission (2016), companies with a workforce of over 250 employees and more than € 50 million turnover, can be characterised as large companies. These large companies are assumed to be well established in their respective markets. Contrary to that, gaining traction in the market and increasing the impact of their innovative solutions is a main challenge of sustainability-oriented startups, as discussed in the following.

According to Schaltegger and Wagner (2011, p.223), sustainability-oriented innovation needs to result in “superior products or processes that are successful in the marketplace of mainstream customers” in order to generate a significant positive impact for sustainable development. However, predicting the actual sustainability performance and the success of a new or modified product or process, especially in the beginning of the innovation process, is considered to be “extremely difficult” (Hansen and Klewitz, 2012, p.258). Sustainability-oriented innovations involve the risk of failing in the market due to one major problem: they tend to be costlier than conventional solutions because external costs are often internalised, resulting in a price premium (Hansen and Klewitz, 2012, p.259). However, even if sustainability-oriented innovations do not fail, another problem appears: most of these innovations
remain to be “islands of excellence” (Uvin et al., 2000, p.1409). This means, as noted by Amin et al. (2002, cited in Lyon and Fernandez, 2012, p.64), that innovative solutions and the associated activities “tend to be localised and small scale”. Thus, innovative ideas with the potential to create considerable value for society or to significantly reduce negative environmental impacts do not have enough influence to truly make a difference. As such, they cannot be considered to be successful in the marketplace of mainstream customers either.

In response to that, the issue of how sustainability-oriented innovations can be scaled up in order to have a significant impact is addressed by a growing number of researchers (e.g. Westley et al., 2014, Uvin et al., 2000; Lee and Restrepo, 2015). Westley et al. (2014) understand scaling up as “an organization’s efforts to replicate and disseminate its programs, products, ideas, or innovative approaches” (p.237). Scaling up is thereby not exclusively about becoming larger, but about the expansion of impact (Uvin et al., 2000, p.1409). Throughout this research, scaling up is defined in a broad way, following the proposed definition of Westley et al. (2014), who describe upscaling as an organisation’s attempts of affecting “more people and cover a larger geographic area” (p.237).

2.3 Collaboration for sustainable development

Generally, collaboration can be described as “a process in which autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together” (Thomson and Perry, 2006, p.23). Following this definition, the autonomous actors of interest to this research project are sustainability-oriented startups and large corporations. As mentioned above, collaboration is considered to be an important component for scaling up sustainability-oriented innovations (Lee and Restrepo, 2015, p.463). In line with this view, Lyon (2012, p. 75) states that “social impact can be achieved through building networks.” Additionally, but in more general terms, Wildridge et al. (2008, p.3) point out that “it is no longer effective for organisations to work alone.” Vangen and Huxham (2003, p.18) list a range of researches who point out that in contemporary societies organisations are restricted by their own competencies, and that collaborative potential between organisations can be unlocked when complementary competences are combined.
The most common notion of corporation-startup collaboration is corporate venturing (CV). Thereby, companies invest in promising ventures, often startups, and become minority shareholders (Landström and Mason, 2007, p.5). Until recently, however, investing in sustainability-oriented startups has been largely avoided, due to expectations of low profits and the involvement of high risk (Linnanen, 2012). Nevertheless, this trend is said to be changing and corporations are expected to increasingly reach out into the startup ecosystem (Weiblen and Chesbrough, 2015). This includes the emergence of other collaboration forms, with some of them including more than the flow of financial assets. Corporate incubators, for instance, are long-term programmes where early-stage startups not only receive financial capital, but also expertise and contacts (Weiblen and Chesbrough, 2015, p.71). Corporate accelerator programmes, on the contrary, are usually short-termed and described as highly purpose driven (Weiblen and Chesbrough, 2015, p.77). However, collaborations between startups and large companies not always happen within the formal structures of CV, incubators, or accelerators, as will be demonstrated later on.

There are various reasons why collaborations between startups and large corporations become more and more attractive. Being new to the market and usually small of size, startups lack experience, contacts, and resources. Therefore, one benefit of collaborating is the opportunity to make use of the collaboration partner’s competencies. Startups are said to be agile, creative, innovative, and willing to take risks, whilst large corporations possess resources, scale, power, and experience (Weiblen and Chesbrough, 2015). Hansen and Klewitz (2012, p.263) highlight the importance of collaboration by stating that “given the complexity of sustainability issues, sustainability oriented innovations are dependent on collaboration.” However, collaboration is also a challenge considering the contrasts between different types of organisations (Kohler, 2016). This is especially true for collaborations between startups and large corporations, as they are “decidedly different” in many aspects (Weiblen and Chesbrough, 2015, p.66). The following literature review serves the aim of identifying benefits and challenges encountered during collaborations between startups and large companies from a startup perspective.
2.4 Benefits and challenges

A review of the small body of literature about collaborations between all kind of startups and large companies reveals that most researchers approach the topic from the corporation’s perspective, resulting in a lack of research on the startup perspective. Refining the search for articles by including terms such as “sustainable”, “social”, “green”, or “environmental” generates an amount of results that is even smaller. First of all, it has to be mentioned that no academic research papers explicitly combining the issues of corporation-startup collaborations and sustainability-oriented innovation upscaling could be found. The concept of sustainability seems to receive only very little attention by researchers in the field of corporation-startup collaboration; only few articles with either a social or environmental focus could be identified. In the following, the benefits and challenges encountered by startups during collaborations with large companies, as presented in peer-reviewed scientific literature, will be summarised.

Receiving investment and support from a large company is described as being a double-edged sword for startups by Weiblen and Chesbrough (2015, p.70). The direct benefit of obtaining financial capital is obvious, and further benefits, such as access to the corporate partner’s network, technical support, market insights, and an increase in credibility in the eyes of other market participants are mentioned. However, the authors point out that collaborating with a large company can also lead to a certain dependence, hampering the startups possibilities to collaborate with other corporations or even a lucrative exit. The findings of other researchers are in line with the proposed benefits and challenges presented by Weiblen and Chesbrough (2015). Bocken (2015) also lists large companies as an important source of financial capital. The author suggests that CV does not play a role in the very beginning of a startup’s life but rather when the startup is about to scale. Lockett et al. (2008) also mention that collaborations with large companies help startups to open up new markets. Bygrave and Timmons (1992), as well as Gompers (1995), conclude that startups benefit from the advice and oversight of large companies. Regarding the issue of increased credibility, Stuart et al. (1991) point out that the perception of a startup can be positively influenced by referring to previous or current collaboration partners. According to the authors, prior accomplishments of a startup are often not enough to convince other market
participants, be it investors, customers, employees, or suppliers. Having a specific focus on venture capital investments in environmentally oriented startups, Randjelovic et al. (2003) present a list of challenges related to collaborations between those startups and venture capitalists. The authors highlight the fact that having a focus on environmental protection or other sustainability matters is perceived as disadvantageous when it comes to the attraction of investors. Apart from that, the authors mention that a lack of skills and expertise on both sides hinders the collaboration between sustainability-oriented startups and large corporations. Protecting their innovative ideas is also a challenge encountered by startups (Weiblen and Chesbrough, 2015, p.76). The fact that decision taking processes in large companies are lengthier compared to those in startups is another challenging reality faced by startups (Weiblen and Chesbrough, 2015, p.76).

With exception of the study by Bocken (2015) on sustainable venture capital and the challenges presented by Randjelovic et al. (2003), the abovementioned benefits and challenges are presented as being generally applicable to startups. However, it is assumed that sustainability-oriented startups are different from conventional startups. This implies that the benefits and challenges listed above may or may not apply to sustainability-oriented startups. Furthermore, there may be other benefits and challenges particularly applicable to startups providing sustainability-oriented solutions. Given the fact that the success of collaborations between sustainability-oriented startups and large companies is not only in the interest of the two involved actors, but also in that of society as a whole, research on this particular issue is considered to be of great importance.
3 Methodology

3.1 Philosophical stance

Prior to explaining the practical details of the research strategy, the underlying research philosophy and the associated epistemological and ontological assumptions are to be outlined briefly. This is important insofar as the assumptions made of the way knowledge is generated (epistemology) and the nature of realities encountered in this research (ontology) shape how the research question is understood, which methods are used, and how the results are interpreted.

It is argued that an interpretivist perspective is appropriate to understand a complex situation of interaction between different social actors coming together at a specific point of time (Saunders et al., 2012, p.137), as in the case of sustainability-oriented startups coming together with large corporations for a specific purpose. Interpretivism as a research philosophy is thereby usually underpinned by a subjectivist ontology, with the researchers viewing the nature of reality as socially constructed (Saunders et al., 2012, p.140). Subjectivism asserts that social actors interpret a situation differently, based on their world view, thereby creating an own subjective reality (Saunders et al., 2012, p.132). Against this philosophical background, the results of this research project can be said to reflect the subjective meanings attached to the collaboration process by the startups, and in particular by the persons interviewed. Apart from the subjective realities described by these persons, the results are influenced by the researchers’ own subjective interpretations. However, as suggested by Richardson (1994), research can never be entirely objective. Some researchers and philosophers, such as Arne Naess, even consider the objective-subjective dichotomy to not be relevant at all (De Jonge and Whiteman, 2014). Contrary to that, the choice of an appropriate research approach is considered to be crucial when studying a specific phenomenon (Wilson, 2010).

3.2 Research approach

Based on the theory and rationale of the study, researchers generally choose between a deductive or an inductive approach (Wilson, 2010). Since the existing body of research does not provide appropriate theories to be tested empirically, a deductive approach is not feasible. Instead, an inductive approach is followed, with
empirically collected data being used to identify themes and patterns (Saunders et al., 2012, p.144). The aim of inductive research is thereby the formulation of untested conclusions, using usually small samples and qualitative methods (Saunders et al., 2012, p.144). As such, an inductive approach serves the purposes of this research project, having in mind the limited amount of prior research as well as the restricted time horizon. The choice of an inductive research approach influences the research design in ways that are outlined in the subsequent chapters.

3.3 Research design

This study’s nature is defined as being exploratory. According to Saunders (2009, p.139), an exploratory research design is appropriate if the researcher wishes to clarify the understanding of a phenomenon. In this particular case, the phenomenon of collaborations between sustainability-oriented startups and large corporations is to be understood. Moreover, this type of research is applicable to study fields where earlier comprehensive research is lacking, as is the case here. Hair et al. (2007, p.154) suggest that exploratory research is appropriate to explore highly innovative industries, which further supports the exploratory character of this research. Finally, it can be noted that exploratory research is not used to test specific research hypotheses, but aims to generate new patterns or ideas. This again is in line with the research aim and the inductive research approach chosen.

Given the purpose of this study, a qualitative research design was considered to be most suitable in order to gain detailed in-depth knowledge from a small sample (Saunders et al., 2009). This choice was motivated by the lack of previous studies in this specific area, which impedes the application of a standardised quantitative methods. In addition to that, it is appropriate to perform qualitative research if the aim is to understand the contexts in which a phenomenon occurs (Myers, 2009). The decision to use qualitative methods to collect and analyse the empirical data is deemed to be appropriate to identify relevant themes and generate findings which can be used as a basis for further research. Being able to make differentiated statements about the effect of certain variables on the outcome of other variables is neither intended nor possible given this study’s research design.
3.4 Research strategy

The research strategy can be described as “the methodological link between [the] philosophy and subsequent choice of methods to collect and analyse data” (Saunders et al., 2012, p.173). For this study’s purpose, a multiple case study strategy was chosen to be most appropriate. According to Yin (2009), this strategy is well-suited if the focus lies on exploring whether findings can be replicated across cases. As described in the following chapter, the cases were chosen to be deliberately different in as many aspects as possible, with only the for-profit and the sustainability orientation being shared characteristics. If the analysis delivers similar results for the chosen cases, a condition termed literal replication occurs (Yin, 2009). Given the limited time horizon of this research, the number of cases was limited to three.

3.5 Data collection and analysis

3.5.1 Selection of cases

In line with the interpretivist perspective of this research, the study objects need to fulfil certain criteria. Since the subjective meanings attached to the collaboration process by sustainability-oriented startups are to be reflected, it has to be ensured that the subjective reality perceived by these specific actors is understood and represented through an appropriate data collection method. Hence, semi-structured in-depth interviews with representatives of sustainability-oriented startups located in Germany and Sweden were used to collect data. These countries were chosen due to the researchers’ familiarity with the respective countries’ economic, political, and cultural context. Accessibility to data was thereby another important factor, as eligible startups could be contacted in German or respectively Swedish and were offered the possibility to conduct the interviews in the respective country’s language. In order to select cases, a non-probability sampling technique called purposive sampling was applied. This technique is particularly apt when data is to be collected from a small sample of informative and non-representative cases (Saunders et al., 2012, p.287). The large number of startups in both Sweden and Germany combined with the specific focus of this research project led to the decision of applying a form of purposive sampling named homogeneous sampling, where all sample members share similar key characteristics. In this particular study,
the startups needed to exhibit an orientation towards sustainability and collaborate with large corporations in order to be eligible. These two qualifying key characteristics significantly narrowed down the number of possible cases. Finally, 3 of the eligible startups were chosen for the study.

Apart from sharing the abovementioned characteristics, the startups were chosen to be different in as many aspects as possible in order to gain diverse insights. They all operate in different industries and are at different stages of development. They also differ with regard to the solution offered. Whilst one startup is providing a service, another one is production oriented, and the remaining one combines a product with product-related services. All of the chosen startups operate on a for-profit basis.

3.5.2 Data collection

In order to construct each of the three cases, semi-structured interviews with representatives of each startup were performed. Semi-structured interviews are a form of unstandardized interviews, which means that there is no exact order or predetermined amount of questions (Saunders et al., 2012, p.375). Instead, this technique is used to avoid leading questions and to enable the respondent to elaborate on topics of his or her own choice. The flexibility of this kind of data collection method allows to capture the unique aspects of each case startups’ development. In order to enable the interviewees to speak frankly about their experiences and to protect the participating startups from negative consequences resulting from their statements, they were granted anonymity and informed about their right to withdraw from the study at any point of time without giving reason.

The data collected using semi-structured interviews was triangulated by taking further information provided by the startups and their corporate collaboration partners into account. This includes information disclosed in company and industry reports, publicly available interviews with the founders of the case startups, or any other kind of information available online.
3.5.3 Data analysis

All of the interviewed startup representatives agreed to have the interviews audio-recorded. Based on the recordings, anonymised transcripts were produced, assigning each startup a letter and each collaboration partner a number. Nevertheless, the transcripts are available only on request and are therefore not attached to this thesis. Since the focus of this thesis lies on the collaborations between sustainability-oriented startups and large companies, the innovations qualifying the case startups as a sustainability-oriented startups will not be discussed in detail, as this could reveal the startup’s identity.

The qualitative data gathered from the interviews was firstly categorised based on the benefits and challenges identified by previous research. However, the semi-structured character of the interviews brought up new issues and hence new categories, leading to a combination of concept- and data-driven categorisation. The final categories were then used to draw conclusions about the benefits and challenges experienced by sustainability-oriented startups collaborating with large companies, using two different forms of analysis: cross-case and within-case analysis (Daymon and Holloway, 2002). As such, peculiarities of each case as well as similarities between the cases can be exposed.

3.6 Validity, reliability, and generalisability

Questions of validity and reliability, but also of generalisability are challenging aspects when case studies are conducted, especially if the number of cases is limited (Yin, 2013). According to Saunders et al. (2012, p.680), reliability refers to “the extent to which data collection […] techniques yield consistent findings.” The reliability of a study can be threatened through factors related to the participants as well as to the researchers. In order to prevent participant bias, i.e. the provision of false responses due to, for example, concerns about consequences, anonymity was granted to the interviewees. However, the fact that the interviews were carried out via Skype or by telephone is deemed a limitation that eventually caused participant and researcher error, since non-verbal communication such as facial expressions or gestures of the interviewees cannot be taken into account.
Validity refers to “the extent to which data collection […] methods accurately measure what they were intended to measure” (Saunders et al., 2012, p.684). Once again, not carrying out interviews face-to-face is estimated to affect the study’s validity. In order to enhance validity, other sources of information were taken into account. This technique is known as data source triangulation and is said to strengthen a case study’s validity (Yin, 2013, p.323). In addition to that, analyst triangulation, also known as investigator triangulation, was applied in order to further improve this study’s validity. Having the collected data reviewed independently by two researchers, followed by a discussion of the subjective interpretations, is considered to contribute positively to the validity, as well as to the reliability, of this research.

According to Yin (2013), generalisability is a challenging issue when using a case study strategy. In order to enhance the generalisability of a case study’s findings, Yin proposes to make use of a technique named analytic generalisation, which describes “the extraction of a more abstract level of ideas from a set of case study findings” (Yin, 2013, p.325). Cross-case analysis is mentioned as being helpful in this regard.

3.7 Limitations

The first limitation to be mentioned concerns this study’s research field itself. Access difficulties were faced due to the fact that startups usually lack resources, with time for extracurricular activities such as participating in in-depth interviews being no exception. Related to this, it can be pointed out that only one representative of each case startup was interviewed. However, the person giving the interview was chosen by the startups themselves as being best suited to answer the questions of the researchers. Additionally, the subjective character of this study is acknowledged and embraced by the researchers, as the startups’ experiences are the central issue of interest. Another limitation, as mentioned in the previous chapter, relates to the way of conducting the interviews via Skype or by telephone. The decision to use three instead of only one case could also be seen as a limitation, as by adding more cases, depth is sacrificed. This means that case-specific factors are eventually not valued enough. On the other hand, evidence from three cases can be said to enhance the study’s validity and reduce the risk of drawing false conclusions from a single, non-
representative, specific case. Another limitation to be mentioned relates to the need of protecting the startups’ identities. Preparing and presenting the data itself is thereby only one challenge. Not being able to mention certain details, as they could reveal the participants’ identity, is seen as a limitation because these details could eventually contribute to a better understanding of the cases and the derived conclusions.
4 Empirical results

4.1 Case overview

Prior to presenting each of the cases, an overview of the three case startups and their respective collaboration partners is provided. As illustrated in Table 1, the three startups are different from each other with regard to a number of characteristics. Whilst Startup A was founded in Germany, Startup B and Startup C are Swedish startups. The startups differ with regard to their main activity, which is, in the case of Startup A, the provision of a service. Both Swedish startups provide tangible products, and, in the case of Startup C, also product-related services. Regarding the three startups’ geographical extension, it can be observed that Startup A is providing its service only in Germany. The solution provided by Startup C, however, is already available in two Scandinavian countries and also in the countries covered by one of their collaboration partners. Startup B makes no precise statement about the geographical extension and defines the current sales market as being the Nordic countries. However, affecting “more people and cover a larger geographic area” (Westley et al., 2014, p.237), i.e. scaling up, is the declared wish of all of the startups.

Table 1: Startup profiles

<table>
<thead>
<tr>
<th></th>
<th>Startup A</th>
<th>Startup B</th>
<th>Startup C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Country of incorporation</strong></td>
<td>Germany</td>
<td>Sweden</td>
<td>Sweden</td>
</tr>
<tr>
<td><strong>Main activity</strong></td>
<td>Providing a service</td>
<td>Providing input materials for production</td>
<td>Providing a product and product-related services</td>
</tr>
<tr>
<td><strong>Geographical sales markets</strong></td>
<td>Germany</td>
<td>Nordic countries</td>
<td>Sweden, Norway, Asian countries</td>
</tr>
<tr>
<td><strong>Founders</strong></td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>Employees</strong></td>
<td>4 full time, 1 intern</td>
<td>3 full time, 2 part-time</td>
<td>5 full time</td>
</tr>
<tr>
<td><strong>Corporate collaboration partners</strong></td>
<td>German C1, German C2</td>
<td>German C3, Swedish C4 (SME), Swedish C5, Swedish C6</td>
<td>Swedish C7, Asian C8 (Startup)</td>
</tr>
<tr>
<td><strong>Other collaboration partners</strong></td>
<td>German NPO1, German Gov1</td>
<td>Swedish Gov2, Swedish Gov3</td>
<td>Swedish Gov2, Swedish Gov3, Swedish Gov4, Swedish Gov5</td>
</tr>
</tbody>
</table>
Startup A collaborated with two large German companies, C1 and C2, by taking part in these companies’ respective accelerator programmes. The Swedish startups collaborated with large companies outside of the formal structures of such programmes. Of Startup B’s four corporate collaboration partners, only three are considered to be large companies according to the definition used throughout this research project (C3, C5, and C6). The Swedish company C4 is categorised as a SME. In similar vein, Startup C is considered to have collaborated with only one large company (C7), as the second corporate collaboration partner, the Asian company C8, was founded even after Startup C, and is therefore categorised as a startup itself. One outstanding similarity among the cases is illustrated in the bottom line of Table 1. All of the startups collaborated with governmental actors, and, in the case of Startup A, with a non-profit organisation funded by the German government.

In the following chapters, each startup’s development will be described chronologically. Thereby, special attention will be paid to the collaborations with large companies and the respective benefits and challenges as experienced by the startups.

4.2 Startup A

None of the four persons who founded the German Startup A had a business background. Instead, the decision to found a company emerged while one of the later founders did research for a Master’s thesis about social entrepreneurship in countries of the Middle East. Back in Germany, the later founders of Startup A participated in a contest for social entrepreneurs and proposed a service in the form of a platform, where instructions on how to fix broken products are to be written by the community. They won the competition, received a four-digit amount, and started to elaborate the business model. It became clear, that by providing solely instructions for self-repair, only a small group of people would be reached. As stated by Interviewee A:

“Most of the people won’t fix stuff themselves, because they don’t have the time, they don’t have the space, they don’t have the tools or whatever, so they will throw it away again. So I could create this great platform, where everybody fixes stuff himself, but if
it’s just for some really highly enthusiastic, already engaged people, well, it’s worth doing it, but it’s just a start.”

The later founders realised that in order to increase the impact of their idea, they additionally had to offer the possibility of using already existing repair services, i.e. functioning as a mediator that connects consumers with broken products to repairers. With this adjusted idea, they participated in a programme offered by a non-profit organisation (NPO1) funded by the German government. Next to co-working workplaces, NPO1 offers consultancy services for early stage startups that try to solve societal issues. During their time at NPO1, Startup A’s later founders decided to launch their idea using a for-profit business model:

“And then there was a time when we felt, well, our product is in itself somewhat sustainable, but in the end, the business model behind it, the company structure, is more or less, if I’m honest, like a normal company […] It’s difficult to decide whether we’re social or not, but I think what we do makes sense in a way.”

Against this background, the founders decided not to promote their service on being particularly sustainable, even though they had been advised to do so by various parties. Interviewee A describes this decision as “a matter of understatement” that is based on the conviction that “if I do something which is proper, I don’t have to say it.” After their time at NPO1, the newly established Startup A was selected to participate in an accelerator programme offered by a large German company (C1). C1 employs over 4,000 people and operates primarily in Germany, Austria, and Switzerland. For Startup A, participation in C1’s accelerator implied a five-figure funding in exchange for a small part of Startup A’s shares. The four-month programme also included marketing and business plan sessions at C1’s headquarters and provided Startup A with the opportunity of meeting “tons of people through their network.” Interviewee A highlights that the sustainability-orientation of a startup has not been an important aspect for C1:

“This was all not much about sustainability, or the company wanting to support… they just wanted to get companies at an early stage with innovative business ideas. And what they liked about us was that we did content marketing […] And that’s what they are also good in. So when they came to us they realised that we have a similar thinking, using content as a driver. And I think that interested them more and the social thing was completely off the record.”
The subsequent participation in a second accelerator programme, offered by another large German company (C2) of over 60,000 employees, is described as being a strategic fit, with sustainability not being an issue for the corporate partner either. Interviewee A describes C2’s reasons for collaborating with startups as “highly business-like” and assumes that supporting a sustainability-oriented startup is considered a nice add-on by large companies in general, because they can use the startups’ sustainable image for their own PR purposes. For Startup A, participating in C2’s accelerator programme, again, included funding in exchange for a small percentage of company shares, as well as mentoring and office space close to C2’s headquarters. This second participation in an accelerator is deemed unusual, as most startups participate in only one accelerator programme. However, in the case of Startup A, the participation in the second accelerator resulted in C2 becoming Startup A’s client. More precisely, Startup A started listing a repair service company owned by C2 on their platform. Collaborating with C2 significantly increased the geographical coverage of Startup A’s service, as one contract with the company’s decision makers added a considerable number of repair options to Startup A’s portfolio. In contrast to that, adding independent, small repairers requires a lot more time and energy:

“I mean, one benefit is reach. It takes an awful lot of time to call, talk to, and meet small repair shops in different towns. […] And obviously, if you go and work with a bigger chain or bigger company, then you can say ok, they have 50 repair shops and if you make a good deal with them then you have 50 repair shops at once on your platform. So obviously it helps you to scale and to grow faster.”

Another benefit experienced by Startup A is the legitimacy granted to their young business through referring to their partners. Startup A lists all of their collaboration partners, both governmental and private, on the home page of their website by displaying their respective logotypes. Interviewee A explains the logic behind this as follows:

“In the beginning, we didn’t have those bigger partners, so people didn’t necessarily trust us. […] But once we started to put those bigger names, then people think: “Well, if [C2] works with them, then they must have proper instructions, then they must have proper repair men.” Then it’s more legit, it’s a question of trust.”
The legitimacy derived from collaborating with bigger companies is not only perceived as a benefit concerning the actual users of Startup A’s service, as illustrated by the previous quote, but also in terms of gaining the trust of other potential corporate collaboration partners. Being chosen out of many applicants to participate in a corporate accelerator programme is described to be a signal to other companies that the startup is doing a good job and hence worth collaborating with.

Apart from serving the interests of Startup A, the collaboration is described as being also beneficial for C2, in the way that it offers the possibility to attract more customers through being listed on Startup A’s platform. According to Interviewee A, C2 also makes use of Startup A’s service as an instrument for differential pricing strategies, because different prices can be set for different geographical markets through the specific design of Startup A’s service. Generally, Interviewee A points out that large companies use accelerator programmes to get access to fresh ideas but also to attract potential future employees. Concerning the latter, Interviewee A reports cases where founders who participated in a corporate accelerator programme started working for the accelerator company after their idea failed. This is considered as being “not stupid either” by Interviewee A, because these people have first-hand experiences when it comes to consulting other founders. The lacking startup perspective is perceived as a major drawback of mentors, who try to give advice to founders without understanding the challenges and limitations faced by startups. Concerning the mixture of helpful and seemingly useless advice received during their participation in the two accelerator programmes, Interviewee A states:

“You have to know what you want. What you want to get out of the programme. And it usually boosts you, because you meet people, you are just increasing your network.”

Accelerators are perceived by Startup A as an efficient way to get in touch with the right people in big companies. Establishing contact with the right persons outside of accelerator programmes is described as a lengthy and often times fruitless process. Their small size is thereby a reason why startups are often not taken seriously by the bigger companies. Apart from being an efficient way to get in touch with the right people, the financial aspect also influenced the decision to take part in accelerators for Startup A. Besides the funding received from C1 and C2, Startup A also relies on a scholarship granted to them by a German governmental actor.
(Gov1). At the point of the interview, Startup A is not yet economically sustainable due to its small scale and therefore dependent on the aforementioned sources of finance. In relation to this, Interviewee A imagines a situation without this dependence and states:

“[If] I could say I’m independent, I don’t need investors, then I wouldn’t have to do deals with guys where I’m not really sure if I want to do these deals with, for example. I mean, [C2] is also responsible for all the crap that is out there, for the cheap prices, and for shitty labour conditions in China. This is the world we live in, right?”

Based on the recognition of the collaboration partner’s negative impact, Interviewee A elaborates on the need and the wish to scale, not least in order to be more independent. The service offered by Startup A is currently only available for one product category in some larger German cities. The plan for the current year is to increase Startup A’s popularity in regard to this product category in Germany, followed by the addition of another product category. Based on that, Startup A wants to decide how to become bigger:

“I think this is what we aim for, to grow a big platform. I don’t need to have a platform that is ruling the world. I like pluralism in some ways. […] But there is so much that can happen on the way, so I can’t tell you now for sure what will happen.”

Concerning further collaborations with large corporations, at this point of time, accelerators are not considered as a useful option anymore by Startup A. Instead, the possibility of gaining some of the thousands of employees of their collaboration partners as customers is mentioned to be a possible scenario. In addition to that, strategic collaborations depending on the product categories to be included in the service are planned by Startup A. In relation to the process of upscaling and collaborations with corporate partners, Interviewee A also highlights the fact that as a comparison platform, Startup A needs to retain a certain degree of independence in order to be legitimate in the eyes of their customers.

4.3 Startup B

The story of Startup B started when a team of Swedish university students tried to develop a lightweight recyclable material suitable for a wide scope of applications. However, the innovators could not commercialise their idea. Some years later, one
of the innovators purchased the patents for the developed technology, founded a company together with four other persons, and made a new attempt to commercialise the idea. Being “as green as possible” is Startup B’s declared intention. If the lightweight material is used, for example, in any kind of application where fuel is burned, less weight means less fuel consumption. From a sustainability point of view, one advantage of the patented technology is therefore energy efficiency. The team behind Startup B quickly realised, however, that having a good idea was not enough:

“We realised that no one really wanted to buy the idea, they wanted to buy a finished product. [...] So, unfortunately, as a small SME, it's not just the good idea, you need to come with a finished product almost. And, no one is going to pay you for R&D.”

Despite having a great need for financial capital, especially due to the research intensive character of their business model, the founders of Startup B did not consider the option of joining an accelerator. Instead, the startup received funding from two governmental actors (Gov2 and Gov3) as well as from some “really generous” industrial companies, with the latter becoming shareholders. Finding investors as well as buyers for their innovation is described as being difficult. As stated by Interviewee B, the sustainability-orientation of their innovation is not communicated, as this aspect of their business is not perceived as being a positive one in the eyes of potential investors and buyers:

“It's just business as usual I would say. Even in the sustainability space. So even if you have a product that is slightly green... we don't try to sell our product on being green, actually, because we know that won't work.”

When Startup B was contacted by an organisation sponsored by a large German company (C3) of over 600,000 employees, they started a collaboration with a SME (C4). As Startup B did not have the necessary spatial requirements, parts of C4’s facilities were rented in order to fulfil the order of the organisation sponsored by C3. The raw materials needed to produce Startup B’s products are purchased from other European countries, because the purchasing conditions offered by Swedish suppliers are not deemed competitive. These initial collaborations offered a valuable experience with regard to the further development of Startup B’s product and business model, revealing both limitations and advantageous aspects. The founders of Startup B successfully completed the order but decided that being the
actual manufacturer is not an option for the future. Instead, they agreed on placing their focus on the provision of the input material needed for the manufacturing of the various parts that can be made using the patented technology. However, another advantage of actually having produced something for a renowned company was the fact of having a reference in form of an invoice. This is described as being helpful for further collaborations with large companies as it demonstrates that someone was willing to pay for the startup’s product or service. At that time, a large Swedish company (C5) became interested in Startup B’s technology. The solution developed for C5 proved to be an ideal basis for all kind of other applications as well. As such:

“What we’re doing now is we’re adjusting what we already have for [C5] for other markets, but it’s almost basically the same thing. So, what we developed for [C5], with a few minor tweaks will work in other applications.”

Another collaboration, again with a large Swedish company (C6), proves that Startup B’s solution can easily be used in different kind of industries, because the scope of application of the product developed for C6 is decidedly different from the ones before (e.g. C3). The application possibilities of Startup B’s offered solution therefore vary according to what the customer wishes for, but the actual innovation offered by the startup, the patented technology, stays the same. According to Interviewee B, however, the startup is still in the testing phase with the Nordic countries being the main sales markets. The intention of Startup B’s founders is to expand geographically in order to be closer to sources of raw material supply, but also in order to sell to a broader audience.

Based on the experiences Startup B made during their collaborations with large companies, Interviewee B concludes that large companies are usually not much interested in helping small companies for the sake of sustainability, but rather look for good deals and useful innovations. As mentioned in the beginning, it’s “just business as usual” for the large companies.

4.4 Startup C

The Swedish Startup C was founded by five persons, with the initial idea being provided by two of them. During their studies at a Swedish university, two of the later founders became aware of an issue related to private households’ energy
consumption and decided to explore this topic in their Master’s thesis. After
finishing their degree, they continued working on their idea and established a formal
business together with three other persons. In the beginning, it was difficult to
convince investors that Startup C’s idea is worth investing in, as reported by
Interviewee C:

“We didn't have any experience, so we just sold this idea based on that we were quite
young and naive, and we just had the will to make it happen. So, it was really hard to
sell to investors, and when I look back it was a really difficult thing, because we wanted
to develop a lot of […] things we couldn't do ourselves, so we had to get funding to buy
those services for development. […] We managed to do it finally with some
governmental funding and some investors that really wanted to do good.”

The governmental funding that enabled Startup C to finally realise their idea was
provided by four different governmental actors (Gov2, Gov3, Gov4, Gov5). One
reason for the difficulties experienced regarding initial funding is, according to
Interviewee C, that sustainability-oriented startups are not a preferred choice of
investors:

“It's a difficult area and a lot of things that have to do with sustainability and greentech…
I mean, if you want to make money fast, greentech is probably not the best to invest in.
It's difficult because you can't expect people to buy your stuff just to save the world,
you need to make money out of it.”

When the product was launched two years after the startup’s official foundation, it
was well received among a small group of early adopters. However, in order to
increase their scale of impact beyond the early adopters, Startup C entered a
collaboration with the large Swedish company C7, hoping to reach the mass market
through C7’s distribution channels. The contact with the company was established
through a random contact. C7 seemed to be an appropriate partner for Startup C’s
planned mass market entry. Therefore, after C7’s corporate venture capital
subsidiary invested in the young business, Startup C developed a product to be sold
in C7’s stores. However, as reported by Interviewee C:

“It proved out that they weren't very good at displaying this product in the stores, and…
yeah, it's still a good product but probably [C7] is not the best place to sell this product
at this moment. So now, even if we would be able to do more things with [C7], I'm not
sure they are the best partner for us at this time and stage of our company.”
The failure to reach mass markets through a collaboration with C7 finally led to the termination of this collaboration. According to Interviewee C, the time and energy spent on developing a solution for C7 could have been used to do other, more valuable things. Startup C’s predominantly negative experiences regarding collaborations with large companies is summed up by Interviewee C as follows:

“Maybe it is easier to get a little a bit further and when the innovation is […] about to become a mass market product, then you could collaborate with the big companies, because I see a lot of difficulties within large corporations and driving innovations. They're really as bad as you expect them to be.”

As such, collaborating with large companies in the very early stages is not deemed to be a recommendable move by Startup C. In addition to that, Interviewee C states that dedicating all resources to only one collaboration is highly risky for a startup, both in case of failure and success. For the startup, failing implies severe consequences, in some cases even insolvency. In case of success, the large company may take advantage of the startup’s dependence. Concerning the causes of why the collaboration with C7 failed, Interviewee C proposes:

“I think what we experienced with [C7] was that the driving forces within the companies were so different. As a small company the launch of a product like this is like life or death for the company. I mean for us, when we launched the product with [C7], it was the biggest deal we had ever made. It was a lot of money and […] we needed success.”

Thus, the collaboration with C7 meant a lot to Startup C and was crucial for their future success, whilst the future of C7 was far from being at stake. Adding to the list of negative experiences, Interviewee C mentions that negotiations for being taken over by a third party also failed because of C7. Nevertheless, Startup C is described as being back on track, with another collaboration seen as an appropriate means of reaching the mass market; the collaboration with the Asian company C8, a quickly growing startup planning an international roll-out, is increasing Startup C’s geographical coverage significantly. Startup C currently sells their product in Sweden and Norway, with two other Nordic countries being entered within a year. The product offered today has been adapted to the evolving technological landscape and became part of the solution of C8. As such, Startup C’s product is available on C8’s markets, too.
5 Analysis

5.1 Overview of benefits and challenges

The cross- and within-case analysis performed on basis of the empirical data presented in the previous chapter revealed four main benefits and four main challenges (see Table 2). Given the subjectivist ontology underlying this research, these benefits and challenges reflect the meanings attached to the collaboration process by sustainability-oriented startups. Each of the benefits and challenges will be explained in detail in the subsequent chapters, thereby answering the two research questions that guided this inductive, exploratory research project.

Table 2: Overview of benefits and challenges

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial aspect</strong></td>
<td><strong>Contact establishment</strong></td>
</tr>
<tr>
<td>Collaborations with large companies can be an important source of funding.</td>
<td>Establishing contact with the right persons can be a complex and lengthy process outside of formal structures.</td>
</tr>
<tr>
<td><strong>Business development</strong></td>
<td><strong>Resource availability</strong></td>
</tr>
<tr>
<td>Collaborating with large companies can contribute to the improvement of a sustainability-oriented startup’s business model and/or product or service.</td>
<td>Differences in the availability of resources can create unequal power structures and lead to situations that are disadvantageous for sustainability-oriented startups.</td>
</tr>
<tr>
<td><strong>Networking possibility</strong></td>
<td><strong>Risk of dependency</strong></td>
</tr>
<tr>
<td>Collaborations with large companies include the possibility of establishing valuable contacts.</td>
<td>Becoming too dependent on a large company implies a number of risks.</td>
</tr>
<tr>
<td><strong>Credibility</strong></td>
<td><strong>Perception and relevance of sustainability</strong></td>
</tr>
<tr>
<td>Collaborating with a large company can enhance the credibility of a sustainability-oriented startup in the eyes of other market participants such as consumers or investors.</td>
<td>The sustainability benefits of a startup’s innovation are communicated only reluctantly, because it is perceived as implying high risk and low return.</td>
</tr>
</tbody>
</table>

5.2 Benefits from collaborations with large companies

5.2.1 Financial aspect

One reason for collaborating with large companies is reported to be a startup’s need for financial capital (Weiblen and Chesbrough, 2015). This need is a feature shared by all startups in this case. All of them used the possibility to raise capital from large companies. Whilst Startup A received investment grants from both C1 and C2 when participating in the companies’ accelerator programmes, Startup B was
provided with financial capital by some large industrial companies. Startup C received a fund by C7’s venture capital subsidiary. In all three cases, large companies play a vital role as shareholders. Especially Startup A relies on the financial capital provided by C1 and C2, as the current scale of transactions is too small to generate enough revenue. Startup B perceives the fact that these companies provided financial capital as a stroke of good luck. However, as will be discussed later, finding corporate investors is not an easy task for sustainability-oriented startups. As mentioned for example by the representative of Startup C, “investors that really wanted to do good” and governmental support were needed to get started. Out of reasons that will be discussed in Chapter 5.3, none of the startups exclusively relies on corporate investors.

Nevertheless, of the different sources that compose each startup’s monetary assets, funding from large companies can be defined as forming a crucial part. The financial benefit of a collaboration with a large company is thereby perceived as outweighing the negative aspects. This is illustrated by the case of Startup A, where the corporate partner’s negative impact is recognised, criticised, but nevertheless accepted because at that point of time the need for financial capital is just too strong.

5.2.2 Business development

It is assumed that improving products and services in order to better satisfy customer needs is crucial if sustainability-oriented innovations are to be sold to mainstream customers (Schaltegger and Wagner, 2011, p.223). Against this background, the improvement of sustainability-oriented startups’ business models and/or their offered solutions as a result of collaborating with a large company can be defined as beneficial for a sustainability-oriented startup’s upscaling ambitions. As demonstrated especially by the case of Startup B, collaborating with a variety of other companies contributed to the development of both the startup’s business model and product. The first collaboration with C3, where C4’s production facilities were used, resulted in the realisation that being the actual manufacturer is not a desired way of commercialising the sustainability-oriented solution. This first collaboration also unveiled limitations of the startup’s product. The following collaboration with C5 resulted in a product that can easily be adapted to fit multiple purposes, which makes it easy for the startup to meet the demands of future clients.
without devoting a lot of resources to R&D again. Interviewee B states that they would not have been able to achieve this on their own. Thus, for Startup B, the collaborations with the large companies C3 and C5 can be considered as positively contributing to the startup’s aim of selling to a broader audience by improving both the business model and the offered product. In the case of Startup A, the benefit of an improved business model is less evident. Nevertheless, some of the practical advice received during the accelerator programmes is described as being helpful. It can be noted that C1 and C2 each operate in different industries, leading to the presumption that each company has different competencies and hence different advice to give. In the case of Startup C, the described adaptation to the developing technological landscape cannot be associated with the collaboration with C7. Instead, the current collaboration with the Asian startup C8 is described as enabling Startup C to effectively address customers’ needs through being part of C8’s solution. However, as only C7 is considered to be a large company, collaborating with a large company cannot be considered to have contributed positively to Startup C’s development.

In line with the findings of Weiblen and Chesbrough (2015), the examined cases indicate that collaborations between sustainability-oriented startups and large companies are not limited to financial transactions. In accordance with Bygrave and Timmons (1992) and Gompers (1995), who suggest that startups in general can benefit from the advice and oversight of large companies, sustainability-oriented startups can be assumed to be no exception. Especially in the case of Startup B, the collaborations with large companies had a tangible beneficial impact on the offered product and the business model behind it.

5.2.3 Networking possibility

In the following, a closer look will be taken at the topic of how collaborations with large companies provided the case startups with the possibility to widen their respective network, which is, according to some researchers, an effective and even indispensable way of creating a positive impact (e.g. Lyon, 2005; Wildridge et al., 2008). Weiblen and Chesbrough (2015) describe network access as one benefit of collaborating with large companies. Within the formal structures of the accelerator programmes, Startup A was able to become part of both C1 and C2’s network. Since
the size of large companies makes it hard for outsiders to identify the persons in charge, participating in C1 and C2’s accelerator programmes is perceived by Startup A as an effective way of getting in touch with the right people inside a large company. The possibility to reach out to the right people inside C2 thereby led to a continuation of the collaboration with the company beyond the limited period of the accelerator programme. In the case of Startup C, being funded by C7’s venture capital subsidiary opened up the way to the subsequent collaboration with C7, as it enabled the startup to get in touch with the right people inside C7.

Based on the experiences made by the case startups, the possibility to network resulting of the collaboration with large companies is estimated to be beneficial for sustainability-oriented startups. This conclusion supports the findings of general research on corporate-startup collaborations (e.g. Weiblen and Chesbrough, 2015; Lockett et al., 2008).

5.2.4 Credibility

Weiblen and Chesbrough (2015), as well as Lockett et al. (2008) point out that startups can benefit from collaborating with large companies by being granted credibility. A startup’s prior accomplishments are often not enough to convince other market participants, such as investors, customers, employees, or suppliers (Lockett et al., 2008). For both Startup A and Startup B the collaboration with large, well-known companies proved to be beneficial. In the case of Startup A, especially the collaboration with C2 enhanced the startup’s credibility and is estimated to be the reason why consumers started to trust the startup. In addition to that, the fact that Startup A was selected to participate in accelerator programmes is perceived as enhancing the startup’s trustworthiness in the eyes of other potential corporate collaboration partners. Startup B also confirms that having collaborated with a large company significantly adds to the startup’s credibility in the eyes of other potential customers. All of the case startups display either the logotypes of their corporate collaboration partners on their own websites (Startup A and Startup C) or refer to the success of the respective collaborations by other means (Startup B). It can be noted, that even though the collaboration with C7 is perceived rather negatively by Startup C, the logotype of the well-known company C7 is still displayed on the website next to those of other collaboration partners.
Against this background, it can be concluded that a major benefit of collaborating with large companies is the credibility given to sustainability-oriented startups by their corporate partners. This credibility is dearly needed by startups offering sustainability-oriented solutions, as will be discussed in the following chapters. Apart from challenges encountered by any kind of startup, sustainability-oriented startups face some particular challenges related to their sustainability orientation.

### 5.3 Challenges of collaborations with large companies

#### 5.3.1 Contact establishment

The first challenge to be discussed relates to an essential part of any kind of collaboration: the establishment of contact in order to initiate the collaboration. All of the startups in this case made different experiences regarding this aspect. In the case of Startup A, contact establishment followed the formal rules of the respective accelerator programmes, which usually require the startups to formally apply for the programme. Once selected, the accelerator programme was perceived as an effective way of getting in touch with the right persons inside the company. Outside of such programmes, establishing contact with the persons in charge is perceived as being a lengthy and complex process. Finding the person who has the will, the power, and the financial resources to decide that a collaboration with a startup is worth to be started might take several months. Apart from that, startups are struggling to be taken seriously, especially if they do not have references yet. These aspects make it challenging, especially for early-stage startups, to get in touch with the right people. Based on the three cases, it is assumed that sustainability-oriented startups are having even more difficulties to be taken seriously than conventional startups, as their innovations are sometimes complex to understand and being “green” or oriented towards sustainability is perceived as involving high risk and low return, as will be discussed later on. For Startup B, contact establishment followed traditional ways, i.e. cold calling or meeting at fairs. The importance of networks becomes evident, as knowing someone who knows someone is also mentioned to be a way of initiating a collaboration. This is confirmed by the case of Startup C, where contact establishment with a person working for C7’s venture capital subsidiary happened randomly.
Thus, it becomes evident that establishing contact with the right persons is perceived to be a major challenge by sustainability-oriented startups. As contact establishment is often the critical factor determining whether or not a collaboration will take place, the relevance of understanding the startups’ perspective becomes apparent. At the same time, the necessity to inform the potential collaboration partners about what an orientation towards sustainability is, and, most importantly, what it is not, arises. The challenge of getting in touch is therefore closely linked to the challenges described in the following chapters.

5.3.2 Resource availability

As most startups, sustainability-oriented startups usually lack resources in the form of financial capital, but also knowledge, skills, and expertise. Large companies are usually in possession of these kind of resources, but lack other features such as agility or creativity (Weiblen and Chesbrough, 2015). On the one hand, these differences can lead to fruitful outcomes for both parties if the respective resources and capabilities are combined and managed effectively. On the other hand, differences between two collaboration partners are a potential source of problems. As pointed out by Randjelovic et al. (2003), the lack of skills and expertise on both sides can lead to misunderstandings and hamper the collaboration. In the case of Startup A, for example, some of the mentors giving advice never made first-hand experiences with an own startup, thus lacking knowledge and understanding about a startup’s challenges. It also appears from the case of Startup A, that lacking financial resources leads to sustainability-oriented startups making deals with large companies whose business practices are somewhat contradictory to the own understanding of how companies should behave. In the case of Startup B, a considerable amount of money is spent on R&D before a potential customer pays. Hence, in order to scale up their impact, investments need to be done by Startup B. The same holds for Startup C, where, especially in the beginning, development services were needed. This, once again, requires financial capital. The differing availability of financial resources also leads to the following situation, as described by Interviewee C. For a startup, a collaboration can be an “all-in” situation, whilst for the large company, this particular collaboration represents only a tiny part of
their business activity. This creates a power structure, that is clearly to the disadvantage of the startup.

It can be concluded, that the lack of financial resources is perceived by all three startups as a major challenge in general. With regard to collaborations with large companies, not having enough financial capital can create further challenging conditions for sustainability-oriented startups, as discussed in the following chapter.

### 5.3.3 Risk of dependency

Collaborating with large companies can be challenging for sustainability-oriented startups, because these organisations usually hold a considerable amount of power and tend to dominate a collaboration. Weiblen and Chesbrough (2015) propose that a startup’s dependence on a large corporation can eventually hamper the startup’s possibilities to collaborate with other corporations or even a lucrative exit. Since Startup A’s business model requires a certain degree of independence, the risk of being too dependent on a large company is an obvious challenge. Not being perceived as being independent by the customers anymore could have severe consequences for the startup’s upscaling ambitions. Concerning the case of Startup C, the dependence resulting out of the collaboration with C7 significantly slowed the startup’s upscaling process down. The consequences of being dependent on only one company could have also resulted in the startup’s shutdown. Furthermore, collaborating with C7 ruined an opportunity to sell the business, which is in line with the proposition made by Weiblen and Chesbrough (2015).

As illustrated especially by Startup A and C, becoming too dependent on a corporate partner can be highly risky for sustainability-oriented startups. A major challenge when collaborating with large companies is thus related to the maintenance of a certain degree of independence. As mentioned in previous chapters, however, the limited availability of resources often leaves sustainability-oriented startups with no choice but to accept a large company’s terms and conditions.

### 5.3.4 Perception and relevance of sustainability

The fourth, and probably most crucial challenge relates to an issue of central interest to the startups: sustainability. The three cases all illustrate that the collaboration
partners’ driving forces are not necessarily the same, especially with regard to the perception of and relevance attached to the issue of sustainability. According to Linnanen (2012), investing in sustainability-oriented startups has been avoided because investors expect high risk and low return. This makes it difficult for sustainability-oriented startups to find corporate investors in the first place, as outlined above, but can also lead to problems once a collaboration has been initiated. In the case of Startup A, none of the large companies displayed a specific interest in social or sustainability topics. The interests of the companies are described as being the access to innovation and eventually workforce with an entrepreneurial spirit. For C1’s accelerator, the fact that the startup used a similar approach towards marketing was the main reason why Startup A was chosen to take part in the programme. The fact that one of the startup’s in a large company’s portfolio may be oriented towards sustainability is, if at all, exploited for the large company’s PR purposes. As such, the large company tries to benefit from the sustainability image of the associated startup. The abovementioned fact, that a sustainability orientation is perceived as involving high risk and low return, contributed to Startup A’s decision to not communicate the sustainability orientation of their business. The same holds for Startup B. The startup’s declared motivation is to be “as green as possible” but this orientation is not communicated either. Contrary to that, Startup C communicates, at least more openly than the other two examined startups, the sustainability benefits of its solution. For them, this decision led to being chosen by C7’s venture capital subsidiary which focuses on funding environmentally oriented ventures.

Against this background, it can be noted that offering a sustainability-oriented innovation does not seem to be a selling argument for startups, but is rather obscured in order not to deter investors. This challenge is closely linked to the challenge of establishing contact. Once again, the necessity to inform the potential collaboration partners about what an orientation towards sustainability implies, arises.

5.4 Role of actors other than large companies

The exploratory nature and inductive approach towards the topic of corporation-startup collaborations revealed another central finding not explicitly covered by the
two research questions. It relates to the role of actors other than large companies. Since this topic is deemed to be of central relevance if the upscaling intentions of sustainability-oriented startups are to be understood, it will be discussed briefly in the following.

Judging by the example of the given three cases, it appeared that sustainability-oriented startups not only collaborate with large companies, but also with small and medium sized enterprises, other startups, governmental actors, and non-profit organisations. In a wider sense, educational institutions can also be added to the list of actors, because the emergence of each of the case startups’ proposed innovation, in one way or another, can be connected to a university. In the case of Startup B, the idea was developed at a university, as well as in the case of Startup C, where the innovative business idea emerged out of the founders’ Master’s thesis.

However, the most important actors identified by the researchers of this study are governmental bodies. Each of the startups relies on funding from at least one governmental actor. It can be noted that this funding is the seed funding needed by the founders to get the business started. Collaborations with large companies are happening only at later stages of a sustainability-oriented startup’s development. Bocken (2015) lists governmental actors as crucial providers of seed capital. The three cases support the author’s argument, with governmental actors playing an essential role for the three sustainability-oriented startups. In the case of Startup A, a non-profit organisation contributed significantly to the development of the startup’s business model. For Startup B, the collaboration with the SME C4 enabled another collaboration with the large company C3. And, in the case of Startup C, collaborating with the startup C8 proves to be an effective way of scaling up the impact of the sustainability-oriented innovation offered by Startup C. These observations lead to the assumption, that a combination of collaborations with different actors can be highly beneficial for sustainability-oriented startups. The role of large companies in the collaborative networks of sustainability-oriented startups is thereby an issue that requires more comprehensive research. A network approach, taking into account the roles of all involved actors, is hence suggested by the authors. This means, that if a sustainability-oriented startup’s upscaling process is to be understood thoroughly, not only large companies, but also other collaboration partners need to be considered.
6 Conclusion

The aim of this research was to explore the phenomenon of startups collaborating with large companies in order to scale up their sustainability-oriented innovation. A lack of research in this particular area led to the decision of following an exploratory, inductive approach in order to provide a basis for further, more conclusive research on the topic. The study was guided by two research questions:

*In what way can collaborations with large companies contribute to the upscaling ambitions of sustainability-oriented startups? What kind of challenges are encountered when collaborating with large companies?*

With regard to the first question, four key benefits could be identified. As most startups, sustainability-oriented startups are in need of funds, especially in the beginning. Collaborations with large companies provided the case startups with financial capital needed to pursue their upscaling ambitions. However, the financial aspect is not the only benefit of collaborating with a large company. Non-financial resources, such as knowledge and expertise, are also granted to the sustainability-oriented startups. Collaborating with a large, experienced company is hence estimated to contribute to the development and improvement of a sustainability-oriented startup’s business models and/or product or service. Complementary resources and capabilities are thereby considered to be beneficial for a sustainability-oriented startup’s upscaling intentions, if managed effectively. Apart from contributing to business development, collaborations with large companies also offer a possibility to network for sustainability-oriented startups. Getting in touch with the right people can be facilitated by becoming part of a large company’s network. The fourth benefit derived from collaborating with large companies concerns the increase in credibility granted to sustainability-oriented startups. Being able to refer to collaborations with large, well-known companies can turn out to be beneficial for sustainability-oriented startups in more than one way. On the one hand, it can increase the trust placed in the startup by consumers. On the other hand, potential future collaboration partners can assume, that if the startup was chosen to collaborate with a specific large company, this must have happened for a reason. As such, credibility is granted to sustainability-oriented startups in the eyes of other actors such as consumers, other companies, but also potential investors.
Concerning the second question, four major challenges could be identified. The first challenge relates to the establishment of contact with the right people inside a company chosen to be suited for a collaboration by the startup. It appeared that outside of formal programmes such as accelerator programmes, contact establishment is perceived as being a complex and lengthy process. The second challenge concerns the differences in resources available to the collaboration partners. It can be assumed that the lack of financial resources is thereby a major challenge for sustainability-oriented startups, leading to a range of other challenging situations. Finding adequate investors is reported to be difficult and if a collaboration with a large company is entered for financial reasons, this company’s business practices can be contradictory to the values hold by the sustainability-oriented startup. In some cases, the collaboration with a large company resulted in a power structure that clearly leaves the sustainability-oriented startup in a disadvantageous position. Becoming too dependent on the collaboration with a large company can then turn out to be a threat to the startup’s upscaling intentions. Hence, the risk of being dependent on a large company is defined as being one of the main challenges, as it can lead to a range of other problems. The fourth, and maybe most central challenge, are the different perceptions of what a sustainability orientation entails. Being oriented towards sustainability is still perceived as involving high risk and low return by large companies. Sustainability-oriented startups seem to be reluctant to communicate the sustainability benefits of their innovations, as it could deter potential investors.

Another key finding of this study relates to the role of actors other than large companies. It turned out that small and medium sized companies, other startups, governmental actors, educational institutions, and non-profit organisations also need to be considered if a sustainability-oriented startup’s upscaling process is to be understood. Based on the experiences made by the three case startups, especially the role of governmental funding can be highlighted.

Against this background, it can be concluded that collaborations with large companies are a double-edged sword for sustainability-oriented startups. On the one hand, beneficial aspects, such as network access or the possibility to develop both business model and product or services, cannot be provided in the same way by other potential collaboration partners. On the other hand, sustainability-oriented
startups encounter a number of challenges when collaborating with large companies, mainly due to the different perceptions of and relevance attached to the issue of sustainability. This particular challenge is assumed to be closely linked to the other challenges. Informing potential corporate collaboration partners about what a sustainability orientation entails is deemed to be of crucial importance, as it could mitigate the other challenges encountered by sustainability-oriented startups. The fact that startups tend to not communicate the sustainability benefits of their innovative solutions in order to not deter potential investors and consumers demonstrates that understanding, recognising, and accepting the role of business for sustainable development is still not the rule but continues to be the exception. For sustainability-oriented startups this sometimes means that deals with corporate partners who have a significantly different understanding regarding this issue have to be entered due to a lack of other possibilities. The story of how a large, well-known company helps a startup for the sake of scaling up the impact of the startup’s sustainability-oriented innovation cannot be told yet, based on the findings of this study. Instead, it turned out that other actors, mostly governmental ones, play a crucial role when it comes to supporting startups in their ambitions to scale up the impact of their sustainability-oriented innovations.

Due to the exploratory nature of this research, a number of issues to be examined by further research emerged. As already indicated, the benefits and challenges identified are not separate from each other but rather related and interdependent. Investigating how the abovementioned benefits and challenges are related to each other is therefore considered to be of interest if sustainability-oriented startups’ upscaling processes are to be understood and improved. With regard to the fourth benefit of credibility, the question of how perceptions of customers, investors, and other actors are influenced if a sustainability-oriented startup refers to a large corporate collaboration partner, emerges. It could also be interesting to know how the credibility gained from referring to corporate partners differ from the credibility gained from referring to, for example, governmental partners. Concerning the decision of not communicating the sustainability benefits of their respective innovations, it could be asked how the startups’ upscaling performance would be influenced if the sustainability orientation was communicated openly. Another field of research relates to the discussed relevance of actors other than large companies.
It could be explored, for example, how collaborations with a variety of actors complement each other. Overall, it can be concluded that the findings derived from this exploratory study can serve as a starting point for further research in the field of sustainability-oriented innovation upscaling in general, and in the area of collaborations between sustainability-oriented startups and large corporations in particular.
References


