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Changing for good: transforming existing organizations into sustainable enterprises

PhD Thesis

to obtain the degree of PhD at the
University of Groningen
on the authority of the
Rector Magnificus Prof. C. Wijmenga
and in accordance with
the decision by the College of Deans.

This thesis will be defended in public on

Wednesday 16 September 2020 at 15:00 hours

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Changing for good: transforming existing organizations into sustainable enterprises

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Preface

“As a result of my studies, I have become aware of the severity of climate change and the unavoidable low-carbon society transition that my generation is going to face. A variety of courses and projects taught me about the importance of zero energy buildings¹, insinuating both excitement and concerns. If zero energy buildings were so essentials in order not to compromise the needs of future generations, and if they are technically feasible, why do we see so few of them?” (Greco, 2016).

I wrote this question only a few months prior to my job interview with Prof. Gjalt de Jong and Dr. Joop Houtman, which landed me a PhD position at the Centre for Sustainable Entrepreneurship in Campus Fryslân. Needless to say, in that year, my life began a profound transition. My family members might relate this to the birth of my second son. Of course, this event caused an incremental life change. It definitely increased –even more– my worries related to climate change. Yet, I believe the cause of this profound change to have a quite different root.

In the first year of my PhD I presented a paper at the World Sustainable Built Environment Conference in Hong Kong in which I wrote “Although the importance of refurbishing existing buildings is widely recognized, it appears that the current refurbishment rate is insufficient to meet the 2020 EU²’s energy targets.” (Greco et al., 2017, p. 1555). That conference was filled with hopes –supported by promising sustainability transition plans– and fears –supported by a disappointing scientific evidence. But, as our survival instinct dominates, we tend to prefer optimistic outcomes. So did Christiana Figueres³ –keynote of that conference– who, in her opening speech, thanked

¹ A zero-energy building, is a building with zero-net-energy consumption, meaning the total amount of energy used by the building on an annual basis is roughly equal to the amount of energy produced on site, through renewable energy sources.

² The European Commission set important energy targets within its environmental policy. The most important for the building sector was Energy 2020 which aimed at a reduction of at least 20% of GHG, increasing renewable energy by at least 20% and improving the Energy Efficiency of at least 20%.

³ Executive Secretary of the United Nations Framework Convention on Climate Change.

Donald Trump for bringing climate change on the front page again, by withdrawing from the Paris Agreement.

In the very same year, my ethnographic field work started. I can only let you imagine how excited I was for having the opportunity to study the only housing association in The Netherlands which was implementing an energy neutral plan at that time. As you will read multiple times throughout the pages of this article-based dissertation, the housing association protagonist of these articles, had the ambition to reach the target of 20,000 energy-neutral social houses within less than fifteen years.

When I started this PhD journey, in November 2016, the year 2020 seemed very far away. There was an entire PhD separating me and the year of “truth” for the EU 2020 energy targets. While I was feeling deeply fulfilled and willing to taste each moment of my PhD years to come, I could not wait to see whether or not we would have met the EU targets for the built environment. And now, here we are: the year 2020 has finally arrived.

I know, I have heard it many times: the last year of a PhD is hard and can be depressing. Yet, my sad feelings do not seem to be related to my PhD journey at all. These feelings are experienced by many researchers studying the reality of climate change and the failure of governments, businesses, and us all, in meeting important climate targets.

So, let’s now get back to the question in my initial quote “If zero energy buildings were so essentials in order not to compromise the needs of future generations, and if they are technically feasible, why do we see so few of them?”. When I asked this question almost 4 years ago, little did I know that I had to go through a PhD to (maybe) be able to find an answer to this and similar other complex questions. It took a major life transition. It required familiarizing with the tools used by social scientists and to put down—at least for a while—the engineering hat I used to wear.

This PhD research looks at some of the organizational aspects of sustainability transitions. Businesses do have the potential to make the transition to a sustainable economy happening, but, in the majority of cases, they first need to see the problem in order to try to solve it. With this PhD research I have tried to research some of the processes businesses’ actors (can) undergo to become the sustainable entrepreneurs our society so desperately need.

Acknowledgments

This research would not have been possible without the help of many people who have been contributing to this path. Firstly, I would like to thank my supervisors for believing in the topic during the early stage and encouraging its relevance throughout its development. They all have been giving precious feedback and support.

Gjalt de Jong, in the first place, for making possible the collaboration with Elkien, the housing association protagonist of this thesis and for allowing such an important life transition. I have been lucky to be supervised by a scholar supporting the combination of research for the purpose of advancing knowledge with a value-based research striving to support our local communities. This pushed me to become an advocate of transdisciplinary research, which, as we so wonderfully agree, is crucial for disciplines such as sustainability science.

Thomas Long, thanks for your constant moral and scientific support. I was blessed in having a supervisor with which I shared a last-minute and flexible attitude. You were always ready to read my words, even if I'd only gave you a few hours' notice, and even with a very busy teaching schedule. This allowed me to experiment with deadlines, conferences and submissions without feeling alone in these moments.

Also, I would like to express my gratitude to the members of the reading committee for spending much time reading and evaluating my thesis: Prof. George Huitema, Prof. Jo van Engelen, Prof. Annemieke Roobeek, Prof. Jan Jonker. Your comments have contributed to improve the quality of my manuscript.

Although not academic, I wish to place under the label of “supervisor” Mia Schaafsma, who has supervised and helped me greatly since the very first day I stepped with my feet at Elkien. Thanks to you, I immediately felt a part of this organization. Your creativity is inspirational and I simply wish we had more people like you in executive positions, managing value-driven

Acknowledgments

employees across the globe. If this was the case, I probably would not need to write this thesis and worry about negative social impacts of organizations.

This thesis relies on rich qualitative data. The only reason why it was possible to collect this unique amount of data is because Elkien's employees, managers, and partners, have been incredibly open with me and always ready to help. In the first place, Alex Bonnema, for allowing me to access this incredible organization and build the trust I needed to feel at home and join important strategy meetings. A big thank goes to what once was the S&O department, particularly to Henk Heikema, Ytsen Strikwerda, Jeroen Duvergé, Nikkie Smit, Baukje Bergsma, Aafke Postma and Sofia Krol. Not only you have been great colleagues during my ethnographic work, but you have allowed me to access important projects, becoming part of working groups and thinking along when decisions had to be made. Other people at Elkien have greatly helped me during my research to access important data, particularly Reind Fokkens, Helga Hoornveld, Natalie Lakemond, Corinne van Dessel, and Jacoliene Maat. Also, thanks to Patrice Broersma especially for the multiple lifts from Hoogkerk to the office and back, together with Andrew Lawton. You two made the early morning travel to the office more fun and insightful! My sincere gratitude goes also to Peter van de Weg and Harro Eppinga for allowing the continuity of my research, support and freedom throughout the course of this PhD. I cannot mention the very many other people of Elkien who save the world one house at the time, it was inspirational to work with you.

Other organizations have shared information useful for this research, such as the Gemeente Leeuwarden, Accolade, Gemeente Súdwest-Fryslân, Nieuw Elan, and Van Wijnen. The last empirical project discussed in Chapter 6, has been only possible thanks to Rob Goes from Ekwadraat, Friso Visser and Frans Scheepens from Brainfuel, and all the entrepreneurs who participated to the Duurzame Innovatie Challenge Fryslân, 2018.

Also, I wish to deeply thank all the amazing staff of Campus Fryslân who I have seen growing in the past years. When I joined this organization, the staff could still sit around one small table in one room and plan the future. How special to see that the hypothetical students, the building, and the needed staff, object to those early meetings, has now become this faculty's reality. It has been truly an honour to study sustainable entrepreneurship in a nascent new faculty, who evolved everyday with the mission to make the world a better place. This is a truly a wonderful place where to work, study and, do a PhD.

Though I have many more people to thank within Campus Fryslân, I cannot avoid mentioning what all other PhDs called the "sustainables", who became

very dear friends. Femke Vrenegoor, your moral support since the very early days has been immensely valuable, thank you for your constant availability. Manon Eikelenboom, besides being a collaborative co-author and co-coder of parts of this research, I think it was great to share the bus rides to our field work with you. Thanks for correcting my Dutch emails and for having to witness many presentations and meetings in an Italian-sounding Dutch, this gave me precious support.

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All the “sustainables” put their finger prints on this manuscript. They took the time to read and criticize—in a mean way, since that's how we like it—each article of this thesis and improve their quality beyond first-draft imagination. Thank you.

I cannot stop thanking my family for their love and support. My father, mother and parents in law for having done intensive summer-babysitting so that I could write, go to conference, and even do a visiting period abroad. My husband Marco for the constant IT support, infinite love and care. Most of all, I thank my two children Leonardo and Zeno. Leonardo, I thank you for telling me that you believe mum is happy when she works and, for trying to explaining this sophisticated idea—that I also have trouble understanding sometimes—to your little 3-year old brother. I love your beautiful purple hearts you draw for me so very often and I hope I can remember them. And to Zeno, I thank you for having been a good baby throughout the first year and a happy toddler for the following two. Most of all, I thank you for having introduced me to peanut butter with dark chocolate sprinkles. This made my transition to a vegan diet much easier.

Gratefully,

Angela Greco

London ON, October, 2019

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List of Abbreviations

AOM	Academy of Management
BMI	Business Model Innovation
CSR	Corporate Social Responsibility
DT	Design Thinking
EGOS	European Group of Organization Studies
MRQ	Main Research Question
R&D	Research and Development
SBMI	Sustainable Business Model Innovation
SDG	Sustainable Development Goal
SEE	Sustainability Ethics Entrepreneurship
SME	Small Medium Enterprise
SOI	Sustainability-Oriented Innovation
SPOs	Social Purpose Organizations
SQ	Sub-question

“You cannot understand a system until you try to change it.”

Kurt Lewin

1 Introduction to the research

This chapter offers an introduction to this PhD thesis. After introducing the problem statement and research question, it presents a description of the research projects. Subsequently, it provides insights into the research philosophy by introducing the ontological and epistemological assumptions guiding this PhD. It further shows how the research process evolved and concludes by providing guidelines for the reader.

1.1 Problem statement and research question

Amongst government, society, and individual citizens, the role of organizations has been acknowledged as crucial for sustainable development both by scholars and practitioners (Dyllick & Muff, 2016; Hockerts & Wüstenhagen, 2010; Schaltegger & Wagner, 2011). Beside the renown definitions that stress the coexistence of environmental integrity, economic prosperity, and social equity (Brundtland, 1987; Elkington, 1997), sustainable development is operationally described by the 17 sustainable development goals (SDG) (United Nations, 2015). Ending poverty and hunger, improving health and wellbeing, making cities more sustainable, and combating climate change are some of the 17 SDGs set by the United Nations, to be achieved by 2030.

Because sustainable development cannot occur without sustainable businesses (Bansal, 2002), understanding how to transform organizations into sustainable ones is essential.

Hence, we use the notion of **sustainable entrepreneurship** as research lenses, referring to the process that strives to create value that is beneficial for society through business development and positive impact creation. This process implies risk-taking abilities, innovative attitude and alertness, together with determined ethical concerns (Greco & de Jong, 2017).

Sustainable entrepreneurship has been widely acknowledged as the answer to environmental (Cohen & Winn, 2007; Dean & McMullen, 2007; York & Venkataraman, 2010) and social challenges (Dixon & Clifford, 2007; Zahra, Gedajlovic, Neubaum, & Shulman, 2009) that we, as society, face in this

century. Sustainable entrepreneurship lays “in between for-profit and not-for-profit, in between cash and cause. The main goal of the business activity of the sustainable entrepreneurs should be looking for prosperity” (İyigün, 2015, p. 1230).

There is a need for more organizations, both existing and nascent, profit and not-for-profit ones, to evolve into sustainable enterprises, creating positive social and environmental impact in order to achieve sustainable development.

Although the notion of entrepreneurship is commonly utilized for nascent organizations, entrepreneurship does not require –but can include– the creation of new organizations (Shane & Venkataraman, 2000). Entrepreneurship processes occurring in existing organizations are often referred to as intrapreneurship or corporate entrepreneurship, with the latter generally applying to large corporations (Antoncic & Hisrich, 2003). We use the term entrepreneurship because the emphasis is on product/service/process innovation, risk taking and reactivity, regardless of the company’s size and development stage. Generally speaking, entrepreneurial strategy in established organizations is instrumental to achieve competitive advantage.

Often, the notion of positive impact in entrepreneurial strategy, refers to corporate business results, such as profitability. In contrast, we define sustainable entrepreneurship as “the proactive process of innovation and risk taking to address social and environmental problems”. We use the word “proactive” in antithesis to “reactive”, this being more in line with the discipline of strategic change and entrepreneurial strategy as discussed in Chapter 2. The activities of sustainable entrepreneurs should ultimately result in a positive societal and environmental impact.

Sustainable entrepreneurship addresses all the aspects of the triple bottom line: environmental integrity, economic prosperity, and social equity. Former studies on intrapreneurship have described the integration of either social or environmental concerns in the context of existing organizations (e.g. Halme, Lindeman, & Linna, 2012; Kistruck & Beamish, 2010; Mair & Schoen, 2007). Studies addressing both environmental and social entrepreneurial practices have mainly been performed on new ventures (see, for example, Belz & Binder, 2017). The simultaneous integration of the environmental and social strategies, has been addressed in the context of corporate social responsibility, but mainly as a reactive rather than a proactive organizational response (Aguilera, Rupp, Williams, & Ganapathi, 2007; Dixon & Clifford, 2007; González-Rodríguez, Díaz-Fernández, & Simonetti, 2015).

Therefore, we have little understanding of how the sustainable entrepreneurship process can be induced, pursued and maintained in the context of existing organizations. Thus, the Main Research Question (MRQ) posed in this dissertation is:

How is the sustainable entrepreneurship process induced and maintained in the context of existing organizations?

To tackle this research question, different sub-questions are posed, namely:

- SQ1. How can we define sustainable entrepreneurship? How is sustainable entrepreneurship informing existing businesses to transform sustainably?
- SQ2. How can highly regulated hybrid organizations –that are organizations combining multiple goals/logics/identities– induce and maintain sustainable business model innovation?
- SQ3. How does a dual organizational identity influence a manager’s heuristic in the process of strategy design aimed at achieving a new sustainability goal?
- SQ4. How can the unintended consequences resulting from the simultaneous combination of conflicting yet interrelated sustainable development goals be mitigated?
- SQ5. How can collaborative innovation contests be used by businesses to accelerate sustainability-oriented innovation?

Given the complexity of these questions, each chapter offers the theoretical background needed to help familiarize the reader with the basic definitions and assumptions in order to understand the outcome of the research. Each of these questions is addressed in a different chapter of this thesis, as explained in the following section.

1.2 Research projects

Following a thorough study of the literature (Chapter 2) –which aimed at answering SQ1 presented above– the phenomena-driven question of this PhD is tackled through four empirical projects. This dissertation is structured following the format of an article-based thesis, meaning that each chapter should be seen as a stand-alone scientific article. In this section, I briefly introduce these projects. From this section onwards, I use an active voice in the writing of this chapter. This is because, as I will explain in section 1.3, the

researcher's experience is –for the types of methods chosen in this PhD– inseparable from the research itself.

To answer SQ2, I conducted a 2-year ethnographic study at a housing association founded over 100 years ago, which embarked in an energy-neutral trajectory in 2015. This housing association is one of the oldest, as housing associations begin to manifest in the Netherlands at the end of the 19th century. Their initial goal was to provide better working conditions to industrial employees. With the Housing Act of 1921, housing associations became legally established as “housing for the poor”, which was claimed to be a shared national responsibility (Dolata, 2008). The Social Rented Sector Management Order, states that approved housing associations have six duties: housing those who are not able to afford appropriate dwelling; assuring a decent-quality of dwellings; consulting with their tenants; running their finances responsibly; contributing to liveable neighbourhoods; and providing housing, for the elderly and handicapped (Elsinga & Wassenberg, 2007).

The housing association case analysed for this PhD, set an energy neutral target with the goal of transforming the entire portfolio, amounting to circa 20,000 houses, into energy-neutral buildings by 2030. This fieldwork allowed me to observe the phases of sustainable business model innovation referring –and contributing– to the literature of hybrid organization, as presented in Chapter 3. These observations are focused at the organizational level, providing a meso-level perspective to the change process.

Given the hierarchical nature of the case-organization, I identified a need for tackling a micro-level prospective; thus, studying in-depth the decision-making process from the perspective of the departments' managers. This chapter draws from the literature on cognitive biases and organizational identity. We use empirical data collected through active participation in a strategy-change trajectory that occurred over a 10-months period. This was possible given the openness of the organization's managers who gave me access to their strategy meetings, welcoming me as a participant observer. The results of this study are reported in Chapter 4.

As highlighted in the sustainable entrepreneurship literature review (Chapter 2), the activities of sustainable entrepreneurs should ultimately result in a positive societal and environmental impact. However, as shown by the initial results of this PhD research, this is not always the case. Using paradox lenses, I argue that while combining multiple SDGs, there is a significant risk of causing unintended consequences in which, for example, the pursuing of an environmental goal can compromise the impact of a social mission. In Chapter 5, I discuss a possible strategy to reduce this risk. This has been the

outcome of an action research project, intended to initiate a reflexive process on the impact of sustainable entrepreneurial strategy.

While the first three articles written throughout the course of this PhD, focussed on a sustainability-oriented innovation within the organizational boundaries, it is also important to understand how to outsource this type of innovation, when the organization lacks the resources to do so internally. Through an action research project, in collaboration with Ekwadraat⁴, I had the opportunity to facilitate a series of workshops in the contest of the Duurzame Innovatie Challenge Fryslân⁵ 2018. I observed its outcomes longitudinally for a period of one year. In Chapter 6, I provide insights into how small and medium enterprises can use this type of challenges for sustainability-oriented innovation. This chapter contributes to the open innovation literature by introducing collaborative innovation contests as a new organizational form to foster sustainability-oriented innovation.

In the following section, I introduce the research approach I have taken to conduct these projects.

1.3 Research philosophy

Conducting this research required a personal paradigm shift in the way I study problems and observe phenomena. In this section, I discuss what approaches I have taken to science, regarded as any practice that uses a systemic method of observation to gain knowledge. The knowledge developed through scientific methods is based on empirical evidence, i.e. verifiable information, collected in a systematic way; yet the researcher's ontological and epistemological assumptions are important to understand this process. Therefore, I begin by discussing what ontological and epistemological assumptions I consider important to be made in the study of sustainability sciences (Clark, 2007) Finally, I clarify what goals drove my research and my methodological choices.

1.3.1 Ontological and epistemological assumptions

“If a tree falls in the forest and nobody is around to hear it, does it make a sound?”

(George Berkeley, 1710)

In this section, I attempt to convey what ontological and epistemological assumptions have been guiding me throughout my PhD research. Specifically, I intend to clarify in which contexts I approach observations to

⁴ Ekwadraat is an energy transition consultancy company based in Fryslân.

⁵ This is the original name of the challenge in Dutch. In English it literally translates as: “Friesland Sustainability Innovation challenge”.

be of positivistic nature, based on objective facts, and what I argue to be a social construct, thus bounded to individual perceptions.

For example, I hold global warming to be “real” and not dependent on socially constructed views of the world. In other words, if one does not believe that the climate is changing, it does not mean that the climate is not changing. This allows me to consider solar panels on a rooftop as a possible solution to objectively reduce the use of natural resources. This is because solar panels make use of solar energy which is considered to be a renewable source of energy thus neither limited nor scarce in nature. However, whether there is a business case or not for solar panels would be an epistemological assumption. To calculate the business case, I would have to use socially constructed methodologies. Besides, “affordability” is dependent on your budget and your own criterion to determine your return of investment.

I believe these aspects to be crucial for the methodological research choices for the study of sustainability sciences. What follows in this section is inspired by a lecture given by prof. Bansal at the Sustainability, Ethics, and Entrepreneurship conference in Miami in February 2019.

When looking at the SDGs, some of them can be considered to be dependent on socially constructed concepts. One example is the SDG 1: “no poverty”. Though you might want to measure it by looking at income or buying power, these measures have different implications depending on space and time. Some of the people considered eligible for social housing in The Netherlands, thus belonging to what we could label as low-middle class, would be considered upper-middle class in several other European Countries. Poverty is a relative concept (Ringen, 1988) related to a sense of scarcity, bounded to a certain geographical location and a specific time. In 1991, a person with a cell phone would have probably been labelled as belonging to the upper-middle class, probably living in Finland –where the first cellular phone was commercialized. Today, it would be more challenging to make a similar conclusion by only looking at cell phones possession as a single evaluation parameter, given an equal geographical location.

Contrarily, when looking at the SDG 2: “zero hunger”, depending on how we decide to measure it, we can agree on facts like the number of deaths per year due to starvation. We can measure this at different points in time and in different geographical locations, and we can make “objective” comparisons.

Following these considerations, we could argue that our world consists simultaneously of what we could define as, a “real” or biophysical world, and a constructed world. According to Bansal and Kim (2020), the real world operates with immutable principles of time, space and scale, whereas, the

constructed world operates at whatever time, space and scale we choose. For example, we know that a mature dwarf apple tree can produce up to a thousand apples. This is due to certain physical constraints. Contrarily, the iPhones production of Apple Inc. follows market rules, which are socially constructed. For Sustainable Development, the time, space, and scale of the constructed world need to align with the real world. The way the biophysical and the constructed world interrelate today is unsustainable, since the constructed world has been taking from the biophysical world without limits.

Past management research has developed theories that did not take into considerations the Limits to Growth (Meadows, Randers, Meadows, & Behrens, 1972) of our biophysical world. Theories of marketing aimed at selling more; theories of strategy at growing more; theories of operations at cutting costs at all costs.

These theories do not explain the logics of sustainable entrepreneurship, and this has an influence in the methodological choices we have as researchers operating in this field. Unfortunately, for the majority of questions, we cannot simply look at the past through regression analysis and see if our hypotheses are verified (Bansal, 2019). Past businesses have been running on logics that did not respect environmental boundaries. The future of business cannot look anything like a significant sample of past (unsustainable) business practices. We need to research an alternative future, in co-creation with existing businesses for sustainable development. Alternative methodologies and approaches, such as transdisciplinary research, are therefore needed.

1.3.2 Embracing the paradox between positivism and social constructivism

Coming from an engineering background, many of the disciplines I drew upon consisted of what is traditionally described as hard or natural science, such as physics and chemistry. When working within these subjects –except for quantum physics– there was little to no discussion about how my view point as observer was influencing what I was seeing. As long as I was clear about parameters definition, units of measurements, and boundary conditions, I would not encounter consensus issues. Things changed when tiptoeing in the field of social science. Many of the sustainability questions I encountered with this PhD were not fitting into what I used to consider objectively observable and measurable categories. I needed a paradigm shift to approach these questions.

Comte's positivism calls scientists to develop objective and fact-based theory, exactly determined, thus independent from the observer's view point. Yet, not everything we need to know about sustainability –as with many of the

questions social scientists deal with— is going to fit into observable measurable categories. In many circumstances, it is not possible to control the environment and how the subjects interact with it. Besides, not all social facts are applicable to everyone at every point in time. Specifically, in the context of this research, subjective experiences are worth studying even if these cannot be generalizable. For example, I consider it important to understand the meaning that people working in the field of social housing attach to sustainability in order to understand what makes them engage in sustainable entrepreneurial behaviours.

Thus, questions such as: *Why this behaviour? What's the meaning behind it?* would guide my data collection process and analysis. With the aim of seeing the world from the prospective of the subjects I studied, rather than through quantitative data, I have chosen to conduct field work, using participant observations. This research is exploratory and descriptive. With this, I am not trying to prove hypothesis but instead I am trying to understand people's behaviour in their real-world contexts in a way that experiments could not do.

Because of the explorative nature of the questions I tackle, I used an inductive research approach (Eisenhardt, Graebner, & Sonenshein, 2016) in the thesis illustrated in Chapter 3. I did not start with a theoretical framework. Instead, starting from my observations, I used them to form an idea about how the process of sustainable entrepreneurship is induced in the context of an existing organization. This approach differs from deductive logics which use existing theories to inform the hypothesis to be tested. After the collection of data for the first project, however, I started to deepen my knowledge about different theories that would explain my observations. I came to realize that my empirical observations could advance some of the theories I referred to. This is why, in Chapters 4, 5, and 6, I adopted an abductive approach (Dubois & Gadde, 2002). Starting with an observation I sought to find the simplest and most likely explanation for the observations, making a plausible conclusion without being able to positively verifying it.

While addressing the research questions, I was interested in how organizations and their individuals engage in sustainability-oriented innovation, and how users respond to these changes. In the majority of the circumstances, my intention was neither to alter their natural environment nor to make them act differently than they normally would, as it would occur in the case of laboratory experiments. This is the approach taken for the project illustrated in Chapters 3 and 4. However, this might have based upon a rather utopian thinking, as I will argue in the following section. When it comes to sustainability, it is challenging not to influence the behaviour and

ideas of the subjects surrounding the researcher. Therefore, in the projects illustrated in Chapters 5 and 6, I dared to use action research, in which I did intend to influence the subjects studied without being interested in studying the extent to which I influenced their thinking or actions per-se, but rather with the intention to help them achieve their goal.

1.3.3 The fly on the wall still gets heard

As a research method with a strong tradition in anthropology, ethnography involves embedding oneself deeply and over the long-term in a field site of study in order to document the everyday lives, behaviours, and interactions of a community of people. Realistic ethnographers (van Maanen, 2006) approach the field with the intention to document the “truth”, without the ambition to get inside the subjects of study’s head (Watson, 2011). Be like “the fly on the wall” is the metaphor often used to describe the little disturbance the ethnographer should aspire to have.

Simultaneously, the fundamentals of research ethics, require that the subjects of study are fully informed and consensual about a researcher’s role. While the Hawthorne effect⁶ is well known in the context of social experiments, a less discussed topic in the literature is the unavoidable influence –which might be permanent– on the knowledge of the subjects studied, during the execution of sustainability-oriented ethnographic research.

I am illustrating this point with a few quotes I wrote down in my field notes, after my first encounter with the employees of the housing association:

Participant researcher – *Hi, everyone, it’s an honour to be able to do my research here at your department. My name is Angela and I am doing a PhD in sustainability.*

Organizational member – *This is great Angela, what does it mean exactly? Does it have to do with our finances?*

Participant researcher – *Ehm (coughing) no not really, more with environmental planning (...) and social impact.*

Organizational member – *That’s interesting, tell me more (...)*

Conversation goes on for about one minute

Organizational member – *I think we should really do more things like this and better here. Why don’t you talk with our strategy manager, she is just starting with the SCRUM sessions to define our new department’s targets, perhaps you can help.*

⁶ Discovered by Elton Mayo (1880-1949), the Hawthorne effect is the influence of an observer on the behaviour of the subjects studied.

Participant researcher thoughts – *Holy S**t⁷, have I just had an impact on my subjects of study?!*

Well yes. I did. And I could not have done so differently: I was not allowed to lie about what I plan to do, nor about who I am. Or if this was an option I did not know, and, anyway, I have not done it. Quickly after my initial interviews, I started seeing that I was having an impact in the organization. Simultaneously, the instructions I received by my supervisors were to maintain a certain distance and keep the role of a naturalistic observer. I failed dramatically. And I would argue that all researchers somewhat skilled in the field of sustainability might fail, just like I did. This is because the organizations we study, are not only made by learning individuals who ask questions, but they also need help.

And, because according to the IPCC, we only have 10 years to figure out how to act on the climate crisis –and transitions do take a long time– I would argue that we, as scholars, are faced with the professional responsibility to provide help when required. Just like a doctor is deemed responsible to act in medical urgencies around her, so are sustainability scholars responsible to share their knowledge when faced with questions on climate change, which, both in the political and public discourse (Science Media Centre, 2019), has been recently re-labelled as climate crisis. The urgency of climate crisis motivated me to embrace a critical ethnographic perspective first (Thomas, 1993), and a more active role later, planning action research interventions (Coghlan, 2019).

Critical ethnography has the scope to not only describe “what it is” but also “why it is” and what can be done to change it for the better (Madison, 2011). Critical ethnography has been defined as the process of culture reconstruction, moving from what it is, to what it could be (Georgiou & Carspecken, 2002).

In participatory action research (Babbie, 2015, p. 341) “the researcher’s function is to serve as a resource to those being studied—typically disadvantages groups—as an opportunity to them to act effectively in their own interest”. It is indeed the disadvantaged subject who defines the problem statement and, possibly becomes part of the solution.

⁷ The author made sure this was allowed in the context of a scientific publication. Articles using a naturalistic approach actually report swear-words without starring them (e.g. Feldman, Lian, Kosinski, & Stillwell, 2017). However, also authors using a constructivism approach might be reluctant to modify the original language and could even use offensive political statement, in order not to alter the activist stance of the research (Chari & Donner, 2010).

Since the articles reported in this thesis follow a temporally order, the first empirical study (Chapter 3) was conducted with a more realistic approach. With the second empirical study (Chapter 4), I adopt a more critical approach. The empirical study reported in Chapters 5 and 6, besides relying on principles of critical ethnography, have also elements of participatory action research. I consider this approach to be in line with the objectives of transdisciplinary research which I briefly introduce in the next section.

1.3.4 Transdisciplinary and value-driven research

The very first thing that was told to me when I met the management team of Campus Fryslân is that my research was considered a good fit with the transdisciplinary research ambition of the Campus because its aim is to find solutions to local problems experienced by communities, stakeholders, and individuals in the region.

Supporting local organizations and communities has been a guiding principle when choosing the project for my dissertation. This implied that the research I have conducted was not primarily guided by the filling of gaps in the literature, as it often happens in sustainability related research (e.g. Whiteman & Cooper, 2011). Yet, this does not mean that my research did not contributed to the building of new knowledge. This research has been a journey of phenomenological discoveries and theoretical explorations. In fact, as you will read in the following chapters, the research projects allowed me to formulate new propositions. The phenomena I studied throughout my PhD are poorly understood, and the research conducted in these contexts provided important empirical evidence needed to further the understanding of sustainable entrepreneurship in the context of existing organizations.

The point here is that being guided by the mission and vision of a department driven by transdisciplinary research, affected my cases and methodological choices, the theorizing process and approaches, and, most of all, the way I see the “subjects” of the studies. These were not merely instrumental to answer a research question for its own solely sake. Two main questions guided this research:

How can we contribute to the solving of societal problems? How can we aid practitioners and local communities to flourish sustainably?

Transdisciplinarity is an emerging and philosophically grounded approach. It advocates the integration of practice and research, and a methodological exchange across disciplines (Shrivastava, Ivanaj, & Persson, 2013). A

transdisciplinary researcher uses challenges from the business contexts or the natural environment to design the research questions, in combination with a theoretical gap.

If for Sustainable Development, the time, space, and scale of the constructed world needs to align with the real world, an understanding of how both worlds work is fundamental. Sustainability as a discipline lays in between natural, applied and social sciences, requiring a combination of positivistic and hermeneutic approaches: sustainability deals by definition with the interactions between natural and social systems. Therefore, it requires transdisciplinary research approaches, in which researchers take an active role in sustainability transitions (Wittmayer & Schäpke, 2014).

1.4 Notes before reading this thesis

To answer the research questions, a literature review and four empirical projects were conducted, following the format of an article-based dissertation. This implies that each of them resulted in a stand-alone article, here reported in four different chapters, with three of these chapters sharing the same empirical context, though a different unit of analysis. This means, that at times, there will be repetition of the research context. These repetitions are important to assure a complete understanding of the study background when a chapter is taken singularly.

Additionally, in the next chapters, contrarily to the introductory and the conclusive ones, a plural person is used in the narrative. This is because, these are extracted by articles with multiple co-authors, as specified in the footnote accompanying each chapters' title, and I wish to remain loyal to any team effort made for the writing of these articles.

Finally, the following table shows the outline of the thesis, highlighting the research questions addressed and the approach adopted in each chapter. These chapters are finally followed by a conclusive chapter which summarizes the main research findings and highlights suggestions for future research.

Table 1.1: Chapters overview.

Chapter title	Research questions	Methodology
2. Sustainable entrepreneurship: Definitions, themes and research gaps.	SQ1. How can we define sustainable entrepreneurship? How is sustainable entrepreneurship informing existing businesses to transform sustainably?	Narrative literature review (Rumrill & Fitzgerald, 2001).
3. Phases of sustainable business model innovation: organizational	SQ2. How can highly regulated hybrid organizations induce and maintain	Realistic ethnography (van Maanen, 2006) including interviews,

Chapter title	Research questions	Methodology
responses in a hybrid context.	sustainable business model innovation (SBMI)?	non-participant observations, and archival data.
4. Identity Reflexivity: A Framework of Heuristics for Strategy Change.	SQ3. How does a dual organizational identity influence a manager's heuristic in the process of strategy design aimed at achieving a new sustainability goal?	Critical ethnography (Georgiou & Carspecken, 2002) including interviews, and participant observations.
5. Combining SDGs: the need for a responsive approach in strategy change to manage sustainability paradoxes.	SQ4. How can the unintended consequences resulting from the simultaneous combination of conflicting yet interrelated sustainable development goals be mitigated?	Action research (Coghlan, 2019) including interviews and participant observations.
6. Experimentation for sustainability through collaborative innovation contests: the case of the sustainable innovation challenge.	SQ5. How can collaborative innovation contests, involving design thinking, be used by businesses to accelerate sustainability-oriented innovation?	Action research (Coghlan, 2019) including interviews, participant observations, non-participant observations, qualitative surveys analysis.

PART I

Sustainable Entrepreneurship in Theory

“It's not about having it all. It's about having what you value most.”

Jean Chatzky

2 Sustainable entrepreneurship: Definitions, themes and research gaps⁸

The field of sustainable entrepreneurship has been establishing itself, throughout the past decade, as a branch of a broader sustainability management research field. Yet the field is disparate and can benefit from a conceptual synthesis of the main themes and definitions constituting it. In particular, many of the terms adopted in the past decade, such as green entrepreneurs, corporate sustainability, social entrepreneurship, purpose-driven organizations or impact entrepreneurship, are often used interchangeably.

To provide clarity to scholars engaging in the field of sustainable entrepreneurship, we first explore the existing notions of entrepreneurship and sustainable development with the aim to agree upon a definition that will serve as basis for next discussions and research. Subsequently, an overview of the main themes addressed by the literature referring to sustainable entrepreneurship is given. Finally, we highlight some of the gaps that, if filled, will surely bring the discipline forward and potentially guide organizations and individuals engaging in sustainable entrepreneurship practices.

⁸ This chapter is based on Greco, A., & De Jong, G. (2017). Sustainable entrepreneurship: Definitions, themes and research gaps. Centre for Sustainable Entrepreneurship, University of Groningen, The Netherlands. Available at: http://www.rug.nl/cf/pdfs/wps6_angela.pdf

2.1 Introduction

Today we, as society, are facing enormous economic, environmental and societal threats.

“Billions of our citizens continue to live in poverty and are denied a life of dignity. There are rising inequalities within and among countries. There are enormous disparities of opportunity, wealth and power. Gender inequality remains a key challenge. Unemployment, particularly youth unemployment, is a major concern. Global health threats, more frequent and intense natural disasters, spiralling conflict, violent extremism, terrorism and related humanitarian crises and forced displacement of people threaten to reverse much of the development progress made in recent decades. Natural resource depletion and adverse impacts of environmental degradation, including desertification, drought, land degradation, freshwater scarcity and loss of biodiversity, add to and exacerbate the list of challenges which humanity faces. Climate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development. Increases in global temperature, sea level rise, ocean acidification and other climate change impacts are seriously affecting coastal areas and low-lying coastal countries, including many least developed countries and small island developing States. The survival of many societies, and of the biological support systems of the planet, is at risk.”

United Nations (2015, pp. 8–9)

These impellent calls signal entrepreneurs to act accordingly. Given the variety of threats and their intrinsic complexity, it is no surprising that the discipline of mission-driven entrepreneurship is scattered and vast. Entrepreneurship is traditionally recognized as a fundamental engine for economic and non-economic development, triggering job creation and improved products and services (e.g. Audretsch & Thurik, 2004; Koe, Omar, & Majid, 2014; Schumpeter, 1943; Shane & Venkataraman, 2000). Entrepreneurs' primary objective is to satisfy an unfulfilled need or to improve the way this need is currently being satisfied. This promising and fundamental goal does not necessarily imply that positive social or environmental values are being created as a result. On the contrary, entrepreneurial activity is strongly related to environmental damage (Dean & McMullen, 2007; Pacheco, Dean, & Payne, 2010; York & Venkataraman, 2010), with an often associated, negative social impact. Economic and technological progress at any price, without considering societal development and environmental impact, is unsustainable and no longer feasible.

As a direct consequence, the need for transitioning to a more sustainable economy has been growing throughout the past 30 years (Meadows, Randers, & Meadows, 2004). Yet, despite the increased awareness among new and existing businesses of the need to adopt sustainable practices (Elkington, 2006) the number of organizations effectively influencing sustainable development is still insufficient, and needs to rise urgently. This has been motivating scholars in the past decades to deepen the study of grand challenges (Ferraro, Etzion, & Gehman, 2015), mission-driven business (Dean & McMullen, 2007), sustainability sciences (Caniglia et al., 2017; Wiek, Farioli, Fukushi, & Yarime, 2012), and sustainability-oriented innovations (Hansen & Schaltegger, 2013; Wagner, 2012; Watson, Wilson, & Macdonald, 2018), forming the puzzle of the sustainable entrepreneurship field.

Sustainable entrepreneurship has been widely acknowledged as the answer to the environmental (Cohen & Winn, 2007; Dean & McMullen, 2007; York & Venkataraman, 2010) and social challenges (Zahra et al., 2009) that we as society face in this century. Despite the recent theoretical developments, research on antecedents, processes and outcomes of sustainable entrepreneurship remains fragmented. Multiple perspectives have been used to highlight socially responsible businesses and many of the available definitions limit the use of entrepreneurship theories to nascent businesses.

The scope of this chapter is to provide an overview of the field of sustainable entrepreneurship by bringing together work from multiple perspectives; identifying common themes in the antecedents, challenges, and opportunities associated with sustainable entrepreneurship; and highlighting critical directions for future research

Given the broad scope of this review, we adopt a narrative literature review approach (Green, Johnson, & Adams, 2006; Rumrill & Fitzgerald, 2001) aiming at describing the latest developments of the sustainable entrepreneurship field in a comprehensive manner, without excluding a priori studies who could give precious insights, but might not fall under specified terminologies used as search algorithms. This differs from a systematic review approach, which, normally begins with a narrow research question and a detailed method section in which criteria for exclusion and selections of articles are specified. Narrative overviews, also known as unsystematic narrative reviews, are comprehensive narrative syntheses of previously published information. The objective of these review it is often to connect previous studies, criticize them and to summarize the article that are important according to the author in order to aid expert and non-expert readers (Green et al., 2006).

Although our initial pool of articles was selected in a systematic manner, (see Greco and de Jong (2017), the second selection was guided by contribution cited by the first selection. For the first selection, the word ‘sustainable entrepreneurship’ was used as algorithm researched on WorldCat Discovery Service and on the following journals: Journal of Business Venturing, Journal of International Business Studies, Small Business Economics, Entrepreneurship Theory and Practice and International Business Review. WorldCat Discovery Service access to 1.9 billion library sources representing the collection of thousands of libraries worldwide. The articles, theses and books searched through WorldCat include contributions from the year 2011 until May 2017. The most cited article in the literature reviews included in the search, have also been consulted and included in this review. These include therefore older contributions. In total 132 among articles, papers, books and thesis have been consulted for the scope of this review.

We structure this review as follow: we begin with defining the concepts of entrepreneurship and sustainable development. Subsequently, we highlight the similarities and differences among social, environmental, and hybrid enterprises, highlighting how these fall into the sustainable entrepreneurship category according to the definition we propose. Therefore, we identify the main research themes constituting the field, which serve as basis to build the theoretical foundation of this PhD thesis. We conclude by highlighting important gaps and research limitations.

2.2 Sustainable Entrepreneurship: towards a comprehensive definition

Sustainable entrepreneurship is entrepreneurship pursuing sustainable development (Pacheco et al., 2010). Therefore, to provide the reader with a clear understanding of the field, in this section we begin by defining entrepreneurship and sustainable development separately.

2.2.1 Defining entrepreneurship

Defining the mainstream concept of entrepreneurship is an important first but challenging step (Shane & Venkataraman, 2000). Many scholars agree upon the lack of a universally accepted definition (e.g. Carsrud & Brännback, 2007; Gartner, 1988; Veciana, 2007). Some of the early definitions are dated back to the 18th century and are attributed to economists such as Adam Smith and John Stuart Mill. The word ‘entrepreneurship’ became popular in business since 1980s (Majid & Koe, 2012). Deriving from the French word *entreprendre* meaning to undertake or to do something, the term has been redefined a dozen times in the last decades.

Although the majority of the definitions refer more to what entrepreneurs do, rather than who they are, broader definitions have also been proposed. Stokes, Wilson, and Mador (2010) argue that the definitions present in literature are related to three main domains: process, behaviour and outcomes. Schumpeter's definition (1943), one of the earliest and most cited of all, refers to entrepreneurship as innovative process of creative destruction, comprehensively addressing the three domains indicated by Stokes et al. (2010). Following the same criterion, Majid and Koe (2012) define entrepreneurship as “A process of identifying, evaluating and pursuing opportunities through creativity, innovativeness and transformations to produce new products, processes and values that are beneficial” (p. 295).

Several scholars approach the concept of entrepreneurship from a behavioural angle, focusing on what characterizes an entrepreneur as individual. (Ardichvili, Cardozo, & Ray, 2003) describe entrepreneurs as creative individuals, specifically in the way they recognize, create and develop opportunities. They refer to opportunities (a common denominator in several entrepreneurship definitions) to be ‘developed’ rather than ‘identified’ since opportunities “are made, not found” (p. 106). Ardichvili et al. (2003), name personality traits, social networks, and prior knowledge as antecedents of entrepreneurial alertness to business opportunities. Opportunity recognition, creation and development represent a fundamental branch of the entrepreneurship and strategic management definitions and ditto research disciplines (Harms, Schulz, Kraus, & Fink, 2009).

The behavioural angle of entrepreneurship can also be related to others who see entrepreneurship as a process. Venkataraman (2002) defines entrepreneurship as the process of addressing uncertainty, innovation and resource allocation for the creation of personal wealth and social benefit. Weidinger, (2014) also refers to entrepreneurship as an open research process that comes up with unique solutions.

Common grounds of entrepreneurial traits are risk taking, opportunity spotting and innovation in the process of creating unique solutions (sometimes disruptive) striving for longevity. This is independent from the context which might be, for instance, the context of large and established organizations (the so-called intrapreneurship or corporate entrepreneurship), the context of new venture creations, the context of for-profit or not-for profit organizations.

A number of authors refer to entrepreneurship as the creation of new business, that is, namely start-ups (Ardichvili et al., 2003; Gartner, 1988; Gibbs, 2009). Start-ups represent an important cluster of the entrepreneurship literature mainly for their widely recognized potential to

innovate, contraposing them to large organizations. The lack of constraints which typically characterize large and established organizations – such as traditional administrative systems, procedures, shareholder demands – makes start-ups promising for disruptive innovation and substantial societal change. This aspect is also recognized by the European Union, which is supporting the financing of new enterprises addressing urgent societal issues such as climate change and societal progress (Bocken, 2015). In addition, there is tangible evidence that we are currently moving from a managed economy towards an entrepreneurial economy (Audretsch & Thurik, 2004; Schaltegger & Wagner, 2011; Uhlaner, Berent, Jeurissen, & de Wit, 2010). However, the survival rate of start-ups is low. Katre and Salipante (2012) affirm that most earned-income ventures expire within the first 5 years, with a failure pick between the 18th and the 24th month (circa 40% of small businesses fail in the first 5 years). This puts entrepreneurship research in the spotlight, incentivizing several scholars to explore patterns for entrepreneurial success.

Despite the relevance of new ventures, the study of entrepreneurship should not only be limited to new enterprises. As argued by Shane and Venkataraman (2000), entrepreneurship does not require (but can include) the creation of new organizations. The broad potentials of the entrepreneurship discipline are defined also, and foremost, by what characterizes entrepreneurs. Such approach allows to apply the theories of entrepreneurship to existing (transforming) enterprises or to not-for-profit organizations (e.g., social entrepreneurship) including other important branches of organizational theory.

Moreover, as Hockerts & Wüstenhagen (2010) argue, large organizations are more suitable to address a wide range of issues. Start-ups instead, normally focus on one particular issue in which they excel. Established firms excel in process innovation while start-ups excel in product (often disruptive) innovation. Established firms are likely to follow start-ups, once there is evidence (thanks to the new ventures' efforts) that a certain innovation is attractive. Established firms have the means to bring the innovation forward, thanks to their social network, expertise and capital. Together, established organizations and start-ups can initiate and accomplish sustainable development, working in symbiosis in a co-creation process, depending on each other for mutual success (Hockerts & Wüstenhagen, 2010).

Since both, established firms and new ventures play important and different roles in societal development, we do not intend to exclude start-ups from the entrepreneurship research, but merely not restricting the definition of entrepreneurship to the practice of creating new organizations. From now on, we will refer to entrepreneurship as: the process that strives for

innovation and/or value creation and capture through opportunity spotting and development, implying a more-or-less high degree of risk taking, due to its intrinsic uncertainty.

2.2.2 Defining sustainable development

Sustainable development is often defined referring to the Brundtland Report (1987) as “the development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. The Brundtland UN report focuses on social justice and human development within the framework of social equity and the equitable distribution and utilization of resources. However, despite recognizing the breakthrough benefit of this definition, many argue about its lack of practicality. This is because the concept of intergenerational equity (Lans, Blok, & Wesselink, 2014) is not of easy formalization. Societal needs clearly change from one generation to another and their prediction is not a straightforward forecast.

In 1997 Elkington introduced the concept of the Triple Bottom Line (TBL), or 3P (People, Planet and Profit) with the book *Cannibals with Forks: The Triple Bottom Line of Twenty-First Century Business*. This definition attempts to provide a more practical direction suggesting to balance the three dimensions of sustainability: the economical, the human and the environmental systems. Also, this definition did not survive without critics. Following the hierarchical order proposed by Stephen Haines' (1998) seven levels of living systems theory, we can identify the three systems addressed by the TBL approach as not belonging to the same level. In other words, there would not be an economy without society, which would not exist without environment. The planet supports the people who give sense to profit. Following this hierarchical order, many scholars and practitioners support the prominent importance of the planet (Markman, Russo, Lumpkin, Jennings, & Mair, 2016), enhancing the priority of the environmental component within the sustainability definition. This probably explains why the term sustainability and environment are often used interchangeably (e.g. Pacheco et al., 2010).

Though the importance of planetary boundaries was already strongly advocated by the Club of Rome's *Limits to Growth* (Meadows et al., 1972), it took several decades for entrepreneurial action to be moved by these concern, besides ad hoc funded non-profits environmental organizations. The enhanced importance of the environment within business practices, began to emerge when sustainable development became a fundamental issue in policies. Social and ecological sustainability are often differentiated and this can be reflected also in the way many scholars define sustainable entrepreneurship, as discussed in the following section. The most recent

development of ecological sustainability is based on the realization that on a finite Earth the depreciation of “natural capital” (Lovins, Lovins, & Hawken, 1999) cannot go on endlessly. Hence, this is the root cause for the shift from a ‘throughput’ to a ‘circular’ manufacturing economy (Gibbs & Deutz, 2007). Sustainable development aims to protect the so-called non-substitutional capital and its meaning is often context dependent. In the next section, we introduced the different dimensions the reviewed articles refer to, when addressing the field of sustainable entrepreneurship.

2.3 The development of the Sustainable Entrepreneurship field

In this section we seek to explain how the field of sustainable entrepreneurship is emerged. Specifically, we highlight what disciplines have inspired its emergence.

2.3.1 Social, environmental, hybrids, and business sustainability as sustainable entrepreneurship

Despite the critics behind using the TBL (Elkington, 1997) to define sustainable development, the framework is widely used to explain how sustainable entrepreneurs operate. Balancing economic health (economy), social equity (people) and environmental resilience (planet) through entrepreneurial behaviour is what identifies a sustainable entrepreneur (Hockerts & Wüstenhagen, 2010). Research on sustainable entrepreneurship has evolved and combined two different entrepreneurship branches: social and environmental entrepreneurship. Dean and McMullen (2007) offer a comparison between the broader concepts of sustainable entrepreneurship to environmental entrepreneurship comparing it to social entrepreneurship. They explain that the latter tends to address mission-driven, rather than profit-driven entrepreneurship while sustainable entrepreneurship addresses environmental problems without neglecting profit. Organizations that respond to social and environmental problems by applying market mechanisms are often referred to as hybrid organizations (Ebrahim, Battilana, & Mair, 2014). Hybrid organizations are thus characterized by a dual focus: social change and financial sustainability of the organization (Alter, 2007). Both societal and environmental betterments fall under the umbrella of social change, intended as primary goals of social enterprises. Hybrid organizations play a crucial role in sustainable development (Boyd, Henning, Reyna, Wang, & Welch, 2017), as they are able to navigate complexity and uncertainty (Battilana & Lee, 2014) through collaboration (Ramus, Vaccaro, & Brusoni, 2017) and innovation (Jay, 2013). The hierarchical order of these foci affects the identity of the organization. Santos (2012) argues that organizations need to choose whether their focus is on social or financial sustainability and that this choice is central to organizational identity. Ambiguity on the

organizational focus may lead to a loss of legitimacy and upheaval on stakeholders. In contrast, proponents of the triple bottom line (Elkington, 1997) support the idea that organizations can –and should– maximize the different aspects of economic prosperity, social equity, and environmental integrity. The seeking of win-win solutions among the aspects of the triple bottom line can happen simultaneously or sequentially (Belz & Binder, 2017). The literature of hybrid organizations, however, addresses mainly the conflict of two identities: financial and social (Battilana & Lee, 2014; Doherty, Haugh, & Lyon, 2014).

Although sustainable entrepreneurship integrates environmental and social entrepreneurship in one practice, many authors still refer to sustainable entrepreneurship when addressing one of the two (Fellnhofer, Kraus, & Bouncken, 2014; Hockerts & Wüstenhagen, 2010). Recently, the sustainable entrepreneurship literature went through a shift in interest from environmental aspects to prominent focus on the social ones (Fellnhofer et al., 2014). This can be mirrored to the actual business practice – as also stated by Bocken (2015) who, to show this shift, reports some of the interviews to venture capitalists: “everything with a ‘social’ element is getting more important (...) this is where the money is now” (p. 653). In the literature focusing on new organizations, the focus is also rising on start-up ventures motivated by social innovation. The concept of social entrepreneurship has emerged in the late 1990s and it has only recently reached the academic literature (Hockerts & Wüstenhagen, 2010). As affirmed by Fellnhofer et al. (2014) the concept of social entrepreneurship is getting increasingly more attention by the scientific community within the sustainable entrepreneurship field.

The field of sustainable entrepreneurship has drawn from studies on business sustainability, particularly referring to the logics of managers and their cognitive frames (Hahn, Preuss, Pinkse, & Figge, 2014) when pursuing corporate social responsibility (CSR). Today the concept of CSR is related to societal expectations for a business to behave ethically (York & Venkataraman, 2010). “Corporate sustainability can be defined as meeting the needs of a firm’s direct and indirect stakeholders (such as shareholders, employees, clients, pressure groups, communities), without compromising its ability to meet the needs of future stakeholders as well” (Dyllick & Hockerts, 2002, p. 131). There is substantial evidence that organizations ought to invest in CSR to become more competitive, or because they need to react to a public malcontent or previous wrong doing (Aguilera et al., 2007). CSR can take many forms and can be, to a greater or lesser extent, integrated in the business model of a company and/or it could refer to the activity it generates (to clients, employees, shareholder, communities, environment and society). This

implies, for instance, complying with the relevant national and international legislation as well as legislation on Human Rights. In the existing literature there is a tendency to relate CSR or corporate sustainability to large firms and sustainable entrepreneurship to small and medium enterprises. Hockerts & Wüstenhagen (2010) relate sustainable entrepreneurship to both small and large firms, identifying the key differences in the way the two-approach sustainable entrepreneurship. According to our view, there are a few differences between sustainable entrepreneurship and CSR. Not only CSR applies normally to business-oriented organizations, while sustainable entrepreneurship can target different types of organizations, individuals and companies. But when addressing only for-profit organizations, sustainable entrepreneurship is a concept embedded in the core business or goal of a sustainable entrepreneur, while CSR is accompanying the core business. In other words, CSR makes sure that a company does not harm to the society or environment where it operates. Sustainable development, however, does not constitute the main goal of the organization in contrast to what sustainable entrepreneurship does – CSR aims at “doing less bad rather than more good” (York & Venkataraman, 2010, p. 451). In the next section we clarify what characterizes the field of sustainable entrepreneurship

2.3.2 Core Concepts

Sustainable entrepreneurship refers to the discovery, creation, and exploitation of entrepreneurial opportunities that contribute to sustainability by generating social and environmental gains for others in society (Hockerts & Wüstenhagen, 2010; Pacheco et al., 2010; Shepherd & Patzelt, 2011).

The concept of opportunity creation is central in the literature defining sustainable entrepreneurship and entrepreneurship in general (Harms et al., 2009). Cohen and Winn (2007) relate opportunity identification (for sustainable entrepreneurship) to market imperfections namely to the following: (1) firms are not perfectly efficient; (2) externalities exist, (3) pricing mechanisms work imperfectly, and (4) information is not perfectly distributed. They argue that entrepreneurs who spot such market imperfection have greater potentials to be successful.

Common ground between entrepreneurship and sustainability is the concept of longevity, assuring long lasting goods, values or services: preserving current resources for future generations (sustainability) and developing unique solutions for the long run (entrepreneurship). However, we argue that the within the field of sustainable entrepreneurship, longevity should be intended as the insurance of a dynamic positive impact over time. As mentioned before, we cannot possibly predict the needs of future generations since, as shown by history, they are increasingly changing. Traditionally,

mainstream entrepreneurship aims for longevity, i.e., creating long lasting products or services. Sustainable entrepreneurship does not strive to produce long lasting products or services but rather, to generate a positive impact on the social, environmental and economic systems. In rapidly changing times, being adaptive is key; designing a product or service for longevity might be unrealistic and even environmentally damaging as shown by the traditional *modus operandi* of entrepreneurs.

Both sustainability and entrepreneurship require innovation, which, applied to both fields, consist of a creative new combination of existing resources (Nicholls-Nixon, Cooper, & Woo, 2000). Pacheco et al. (2010) define sustainable entrepreneurship as the “discovery, creation, evaluation, and exploitation of opportunities to create future goods and services consistent with the sustainable development goals” (p.471). In our view, sustainable entrepreneurship strives to create value that is beneficial for society through opportunity creation, and development in an often uncertain environment. This implies risk-taking abilities, innovative attitude and alertness together with determined ethical concerns.

2.4 Research themes

This section addresses central themes that we identified as particularly recurring in the literature.

Table 2.1: Overview of the research themes identified.

Research themes	Subthemes	Representative articles
Success factors	Social network, collaborations	Weber and Kratzer (2013); Garcia-Retamero, Takezawa, Woike, and Gigerenzer (2013); Dewick and Miozzo (2004).
	Team composition, individual characteristics	Ardichvili et al. (2003); Gibbs (2009); Lans et al. (2014); Nwaigburu and Eneogwe (2013).
	Managerial experience	Sharir and Lerner (2006).
	Company legitimacy, acceptance of the idea in the public discourse; market readiness	Bianchi and Noci (1998); Nicholls (2010); O’Neil and Ucbasaran (2016).
	Cooperation with public and non-profit sectors	Sharir and Lerner (2006).
Processes	Business model innovation	Bocken, Short, Rana, and Evans (2014); Boons and Lüdeke-Freund (2013); Jolink and Niesten (2015); Wustenhagen and Boenke (2006).
	Cognitive Mechanism	Hahn et al. (2014).
	Drivers	Koe et al. (2014); Uhlaner et al. (2010).

Research themes	Subthemes	Representative articles
Institutions	Institutional entrepreneurship; institutions influencing or limiting entrepreneurial action	Katre and Salipante (2012); Lepoutre, Justo, Terjesen, and Bosma (2013); Spence, Ben Boubaker Gherib, and Biwolé (2011); Stephan, Uhlander, and Stride (2015).

2.4.1 How does sustainable entrepreneurship flourish?

Different scholars seek to shed the light on the factors making sustainable entrepreneurship successful. According to Gartner (1988), for example, new venture creation is an outcome of the nexus of individuals, environment, and process, team composition, individual (entrepreneur) traits (Ardichvili et al., 2003; Gibbs, 2009; Lans et al., 2014; Nwaigburu & Eneogwe, 2013), financing means (Bocken, 2015; Miller & Wesley, 2010), policy interactions (e.g. Barrutia & Echebarria, 2012; Bianchi & Noci, 1998; Pinkse & Groot, 2015), and institutional influence (e.g. Katre & Salipante, 2012; Lepoutre et al., 2013; Spence et al., 2011; Stephan et al., 2015).

In the field of social entrepreneurship, studying 33 social ventures, Sharir and Lerner (2006) identified as contribution to success: the entrepreneur's social network; dedication and team contribution; managerial experience; capital at the funding stage; acceptance of the idea in the public discourse (legitimacy); ratio of volunteers to salaried employees; cooperation with public and non-profit sectors (stakeholder network) and market readiness. Weber and Kratzer (2013) identified **social network** and **business models** as the main factors for a social entrepreneur's financial and social successes.

In the field of clean-tech, Wustenhagen and Boenke (2006) found that business model design is determinant for sustainable energy technologies. In the area of sustainability, Juravle and Lewis (2009) identified tactics that sustainable entrepreneurs adopted to promote sustainable investment: making the business case for sustainable investment; forming coalition with mainstream investors; industry networking and gaining credible expertise. Bocken (2015) found that the business model design is a key factor for success of sustainable start-ups', while according to his study, lack of suitable venture capitalists is one of the main threats for success.

A group of articles analysed the relationship between an individual's tendency to create new venture and the personal social and environmental concerns (e.g. Patzelt & Shepherd, 2011). Kuckertz and Wagner (2010) assessed the influence of sustainability orientation on entrepreneurial intentions with a survey study. They conclude that sustainable related concerns boost entrepreneurial will, but that they decrease the more individuals acquire

business experience. The theory of planned behaviour (Ajzen, 1991), or the profit-first mentality, have also been subject of study to address this aspect (e.g. Lourenco, Jones, & Jayawarna, 2012). Are people who care for environmental or social issues more likely to initiate start-ups? A positive answer to this question opens the doors to the education potential to create substantial impact on sustainable development. The importance of education is supported by other studies which relate a certain set of skills or competences to entrepreneurial success (e.g. Lans et al., 2014; Nwaigburu & Eneogwe, 2013).

2.4.2 Drivers behind a sustainable entrepreneur

This theme answers the question: what moves individuals to engage in sustainable entrepreneurial activities? Why are some entrepreneurs more environmentally or socially concerned (and active) than others? Like for mainstream entrepreneurship, there have been a number of studies attempting to determine the drivers of sustainable entrepreneurship in both individuals and enterprises. Referring to the existing literature and using a schematic approach, it is possible to classify the main drivers as originated by external and internal factors, egoistic and altruistic values. Internal motivation (inner beliefs, or concerns about social and/or environmental causes) or desire for self-employment are internal factors. Market failures (triggering opportunity identification), network, social capital, and public acceptance are to be considered as external ones.

Koe et al. (2014) identify the correlation that sustainable small and medium sized enterprises (SMEs) have between a propensity for sustainable entrepreneurship and: (1) sustainable attitude; (2) social norms (social pressure to undertake environmentally conscious behaviours); (3) perceived desirability (a person's perception on attractiveness of a behaviour); and (4) perceived feasibility (a person's perception on his or her capabilities, also associated to self-efficacy and the desire to be 'self-employed'). Koe et al. (2014) conclude that social norms have a great impact on both, entrepreneurial and sustainable behaviour. All four factors have a positive correlation with a propensity for sustainable entrepreneurship.

While exploring the drawbacks of start-ups in comparison to large establish firms, Hockerts and Wüstenhagen (2010) argue that start-ups are normally focusing on one single environmental or social issue for which they try to excel (and are not fitting the purpose of addressing multilateral issues). They related this to the obsession for one single issue that is, in fact, what drives sustainable start-up entrepreneurs.

A number of authors address the importance of public acceptance – that should not be confused with peer-pressure, which has also been recognized as an important drive – as a key factor in the entrepreneurship process. O’Neil and Ucbasaran (2016) describe the process of legitimacy with a qualitative study of six nascent enterprises. Legitimacy has been recognized as fundamental aspect to engage with stakeholders and therefore to increase success potentials but, as concluded by O’Neil and Ucbasaran, it might often imply compromising an entrepreneur’s drivers. Referring to SMEs, Uhlaner et al. (2010), studying 2000 Dutch firms, affirm that owning a family business motivates entrepreneurs to behave more sustainably due to their closer relationships with local communities and the fear to defame their family’s name. Also Bianchi and Noci (1998), with a qualitative study on 46 companies, recognize the importance of legitimacy for environmental friendly businesses and “having a green image”; but referring to SMEs, they affirm that the pressure is much lower in comparison to larger firms. Nicholls (2010) confirms the relevance of legitimacy also within the social entrepreneurship field.

With a qualitative study of 44 firms in four different countries, Spence et al. (2011) also related the institutional context to the ‘sustainable will’. The importance of institutions has been acknowledged by several scholars and will be further discussed later in this review.

2.4.3 Purpose-driven business or business purpose

The concepts of sustainability and profitability have been put in antithesis for a long time and this can be seen as the root cause behind the sustainable entrepreneurship debate (De Clercq & Voronov, 2011; Parrish, 2010). Although this was particularly true for environmental protective measures, other aspects not strictly related to profit were often questioned against it. The long standing debate on the business case for CSR is one of the many examples (Dyllick & Hockerts, 2002). Is there a business case for sustainability or is there a sustainability case for business? Today, many scholars see sustainable entrepreneurship as a key factor for business success, in comparison to the old-fashion idea that sustainability “costs money” and that it is a capital cost without returns (Bocken, 2015, p. 647). A similar idea is also supported by Weidinger (2014) who views sustainable entrepreneurship not as a “job for the do-gooders or idealists but rather an essential strategic decision” (p. 292).

However, different authors (e.g. Bocken, 2015; O’Neil & Ucbasaran, 2016) agree that “doing good” is, together with environment, society and profitability, a relevant entrepreneur’s driver. This does not conflict to Weidinger's (2014) idea that sustainability does not oppose to profitability any

longer, contrasting what traditional theory from environmental and welfare economics largely concludes. Several scholars, however, support the assumption that market failure within the economic system triggers environmentally degrading entrepreneurial behaviour (Dorman, 1993).

When it comes to new ventures, sustainable start-ups' investors and entrepreneurs believe that sustainable businesses are more likely to succeed (Bocken, 2015). Sustainable entrepreneurship brings innovation and competitive advantage to new and existing ventures (Weidinger, Fischler, & Schmidpeter, 2014). And this holds also for a broader view on successful economic development. What is stated by Weidinger et al. (2013) is that in the European panorama of financial crises, sustainable entrepreneurship has the potential to be a winning strategy to assure economic growth.

In fact, some of the main topics addressed in the SE literature are about business model innovation (e.g. Bocken et al., 2014; Boons & Lüdeke-Freund, 2013; Jolink & Niesten, 2015).

A number of authors have been studying the factors that influence the sustainable performance of companies. Many support the correlation between company size and sustainable performance (e.g. Bianchi & Noci, 1998; Hoogendoorn, Guerra, & van der Zwan, 2015; Uhlaner et al., 2010). For example, Uhlaner et al. (2010), studying a sample of 2000 Dutch SMEs, concludes that the level of sustainability is related to a company's size (large firms are more prone to invest in sustainability), family ownership (that are more socially responsible) and is sector dependent (tangible sectors are likely to perform more sustainable than other sectors). Firms with a negative environmental impact have more opportunities to behave sustainable although they encounter a number of difficulties that are not encountered by nascent ventures.

How can performance of sustainable entrepreneurs be assessed? Schaltegger and Wagner (2011) write: "The degree of environmental or social responsibility orientation in the company is assessed on the basis of environmental and social goals and policies, the organization of environmental and social management in the company and the communication of environmental and social issues. The market impact of the company is measured on the basis of market share, sales growth and reactions of competitors." (p. 222). This vision is also supported by Hörisch (2015) who relates the impact of a sustainable entrepreneur to its market share.

Wut and Ng (2015) assess an organization's sustainable performance by relating CSR to turnover growth and profit growth. They found a positive correlation between CSR and turnover growth and between CSR and profit

growth on the long term, while they found no correlation between these concepts on the short term (i.e., less than two years).

At the country level, sustainable performance in the EU is measured with the Human Development Index Ranking and the Sustainable Development Index Ranking. These were used in Kardos' (2012) conceptual study who relates these indices to the innovation of SMEs in the 10 EU's best performing and worst performing countries. Wut and Ng (2015) used a similar index to select their sample in China using the Hang Seng Corporate Sustainability index. This index, however, is not specifically related to the organizational dimension; it therefore opens the world to a contextual-type of study, like the institutional theory, introduced for the SE discipline in the next section.

2.4.4 The role of institutions

De Clercq and Voronov (2011) argue that to understand individuals' entrepreneurial behaviour, the question is not whether or how much they value profit versus value creation, but rather acknowledging that sustainability and profitability are institutionally embedded. Institutions are oftentimes divided into tangible, 'soft' and intangible 'hard' institutions. Intangible institutions include laws, rules, regulations and instructions, while tangible institutions include habits, routines, established practices, traditions, ways of conducts, norms and expectations (North, 1990).

Pacheco et al. (2010), referring to the game theory literature, affirm that sustainable entrepreneurs can create a positive impact by altering or creating institutions as they represent the "rules of the game". Describing entrepreneurs' conflicting interests with the "prisoner's dilemma", Pacheco et al. (2010) argue that the dilemma of individual versus collective benefits exists in many individual and group decisions relative to ecological sustainability. Such conditions may be evolutionary stable and therefore difficult to alter within the boundaries of the game (institutions). To benefit society, entrepreneurs can "promote new rules in a "bottom-up" fashion" (p. 469).

Can institutions constitute barriers or incentives for sustainable entrepreneurship? Addressing the initiation of social start-ups, Lepoutre et al. (2013) performed a cross-country quantitative study and found that European countries have less social entrepreneurial activities than in Latin American, African, and Anglo-Saxon countries. They related this aspect to the differentiation among three types of economies (which is supported by the Varieties of Capitalism literature): (1) the liberal economy, in which economic and social justice are essentially shaped and governed by market

mechanisms (of which the United States is an example); (2) the cooperative economy, in which the state is considered the best way to redistribute wealth and to regulate markets (the case of most European economies); and (3) the informal economy, characterized by the failure of both markets and the state and in which “affiliations to social groups determine the local creation and distribution of wealth and justice (such as India and several Asian countries)” (p. 711).

The discussion above highlights the importance of the institutional theory for a deep understanding of sustainable entrepreneurship, a cluster of interest that is increasingly attracting researchers’ attention.

2.5 Limitations and research gaps

Our study shares some of the well-known limitations that offer opportunities for future research. The entrepreneurship discipline is in itself a complex and generic field within business studies and the same holds true for sustainability; both are heterogeneous fields and are addressed in different sciences. Future research may explore research lines other than the ones we addressed here.

Additionally, we restricted our analyses to the main topics that currently dominate the field of research. These are important discussions and already offer a challenging research agenda. Future research may complement our analysis and include other themes. Disruptive, radical or incremental innovations increasingly finds a relevant place within the sustainable entrepreneurship literature. Social Impact Assessment (SIA) and Environmental Impact Assessment (EIA) are also of importance. Future studies may assess the aforementioned topics of research.

We also recognize a need to deepen theories relevant for understanding the underlying dynamics of successful sustainable entrepreneurship. Gibbs (2009) states that in order to understand the dynamics of sustainable entrepreneurship, transition management theory could offer building blocks for the most relevant gaps in literature. This fosters one of our views, that is, that systems and game theories are relevant to understand the causes and consequences of (particular dimensions) of sustainable entrepreneurship.

This review of the literature enables the identification of various research gaps in the field of sustainable entrepreneurship. In part this PhD thesis used the identified gaps for the research projects that are presented in the next chapters. In part, the research projects self-enabled the identification and formulation of research questions aligning with the transdisciplinary research paradigm that is advocated in this PhD thesis. Additionally, we also identified research gaps that have not, at least not explicitly, been addressed in this PhD thesis and these gaps serve as inspiration for future research in the field of

sustainable entrepreneurship. In what follows, we highlight the research gaps and the relation with the research that is presented in this PhD thesis.

First and foremost, sustainable entrepreneurs have been the exception to the rule in entrepreneurship practice. Studying their drivers was necessary to understand how sustainable entrepreneurship behaviour could be triggered and fostered. However, once sustainability is acknowledged as a successful strategy that does boost profitability, we argue that future research should also be focussing on the benefits, since this might motivate more action.

Despite the evidence highlighted in this review, we could not identify comprehensive studies on how individuals successfully balance the economic, social and environmental dimensions in organizations that are originally designed to pursue only one or two of these dimensions. This research gap is the main reason for the research presented in this thesis. It aligns with the need to understand the transition or transformation from mainstream to sustainable enterprises or from a double bottom line to a triple bottom line enterprise. In a similar vein, the need for fundamental research about transitions using drivers and benefits as guidelines is also identified in Wiklund, Davidsson, Audretsch, and Karlsson (2011) for mainstream entrepreneurship: “The increased emphasis on opportunities arguably helped entrepreneurship research to focus more on the very early stages of venture development, thereby delivering on the promise of uniquely studying the emergence of new activities and organizations rather than the relative performance of established ones”. Essentially, this is the overall point of departure for this PhD research and the subsequent research projects.

A second research question that has been insufficiently addressed is: Which factors can be considered to be the main predictors for sustainable entrepreneurship success? Lans et al. (2014), for instance, attempt to analyse the relationship between competences and entrepreneurship. Schaltegger and Wagner (2011) affirm that many entrepreneurs start because they have personal environmental or social concerns. This PhD thesis aligns with this research gap, among others, in addressing the phases of sustainable business model innovation in the context of hybrid organizations such as social housing organizations (see Chapter 3).

Third, and on a different note, this literature review suggests that the debate concerning drivers for sustainability should be best analysed from an institutional perspective. As previously mentioned, De Clercq and Voronov (2011) argue that to understand individual entrepreneurial behaviour, the question is not whether or how much they value profit over value creation, but rather acknowledging that sustainability and profitability are institutionally embedded. The effect of institutions on sustainable enterprise

performance is also identified by Cohen and Winn (2007) as a key aspect that warrants more research. The attention for institutions as a predictor for sustainable entrepreneurial success has gained momentum in recent years but it still requires more empirical evidence and research. Institutions concern legal or formal rules in society but also informal rules. This PhD thesis does not study the formal/legal rules and their effect on social housing associations (albeit by definition housing associations in the Netherlands are influenced by formal rules and legislation from the national government) but does analyse the role and evolution of norms, values and behaviour in Chapter 4.

Fourth, as also concluded by Wut and Ng (2015), the question “what is an effective way to assess sustainable performance?” remains largely open. They suggest that other financial indicators such as return on equity, return on assets, cost of capital or market-to-book ratios could be related to sustainability indices. Hence other questions arise: are sustainability indices a comprehensive way to fully capture the value of sustainable organizations? To fill this gap, the SE discipline could be related to SIA and EIA methodologies, striving to provide practical tools for new and existing organizations. Although this PhD does not address this question per-se, it does provide additional evidence to stimulate a theoretical debate on the matter. As discussed in Chapter 5, sustainability efforts from organizations, do not always result in positive sustainability outcomes. Quantitative measurements might fail to capture sustainability efforts as positive sustainability indices might still hide unintended consequences and negative social and environmental impacts.

Fifth, how sustainable entrepreneurship is related to its ecosystem is another research agenda item. Some of the gaps highlighted in the early articles used for this review, show substantial progress made in the past decade. For example, according to Ardichvili et al. (2003), communities, government, non-for-profit and other non-private sector organizations represent a substantial gap in the entrepreneurship research field. Di Domenico, Haugh, and Tracey (2010) identify the topic of social value creation, stakeholder participation and persuasion as being in profound need for further investigation. We believe that these aspects are crucial also for sustainable entrepreneurship research because these can, firstly, facilitate public acceptance—a key aspect identified in the literature for successful sustainable entrepreneurship—secondly, increase the chances of spotting/creating entrepreneurship opportunities, and thirdly, magnify the impact of sustainable enterprises. This PhD contributes to this gap by addresses the role of collaborations among businesses and communities in accelerating sustainability innovation, as discussed in Chapter 6.

Finally, when it comes to methods, a number of authors claim that a small minority of published work uses quantitative researches methods, relating this fact to the infancy of the sustainable entrepreneurship field of research (e.g. Fellnhofer et al., 2014; Gibbs, 2009). Within this review, we do recognize a trend that is moving towards the use of more quantitative methods but this is indeed recent and perhaps limited by the fact that we insufficiently understand the details of the transition process from mainstream/double-bottom line firms to sustainable/triple-bottom line enterprises. This thesis therefore explicitly explored and used advanced qualitative research methods (including longitudinal observations, in-depth interviews, action research, and (n)ethnography).

2.6 Conclusions

We explored the definitions of sustainable entrepreneurship together with the main themes addressed by latest research developments in the field. Sustainable entrepreneurship strives to create value that is beneficial for society through opportunity creation, development and impact creation, in an uncertain environment. This implies risk-taking abilities, innovative attitude and alertness together with determined ethical concerns. It is a solution for the economic, environmental and societal challenges.

Reviewing the existing literature, we explored the prominent role played by both, start-ups and established for-profit firms as well as the not-for-profit sector in innovation and the creation of sustainable added value for our society. The latter represents today's challenge for a new hybrid-type of organizations: effectively balancing societal gains, environmental protection and economic benefits. This is the key driver for sustainable entrepreneurship research. We in particular highlight the importance of analysing the transition and change process from mainstream, single goal/profit-oriented firms into sustainable/triple bottom-line organizations.

With the limitations acknowledged, we believe that this chapter provides an overview of state-of-the-art research in the emerging field sustainable entrepreneurship enabling the identification of a research agenda that in part served as a point of departure for the research projects presented in the next chapters.

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aanlager en verbinder zijn om strategische
verbeteringen met impact te realiseren in de
organisatie zodat Elkhien en haar mede-
werkers toegevoegde waarde kunnen blijven
bieden aan haar huurders, passend bij de
missie en visie van Elkhien; met aandacht voor
energie neutraal bestand, land- en organisatie-
processen.

Als strategie
willen wij de
van Elkhien v
van de stude
zodat we in
toevoegen aan
het huisveste
daar zelf nie
samenwerking

Als beleidsclub

Willen wij een woningpor-
tefeuille en woonomgeving
realiseren
die sociale waarde

creëert

zodat we bijdragen aan het
geluk van de huurders

met aandacht voor

- financiële haalbaarheid

- energieneutraal bezit

- betaalbaarheid

- zelfstandig wonen

Als Team Strategie & Omgeving

Willen wij kansen en mogelijkheden
screeneren die de organisatie
mogelijk maken bij het werken van de
Tweede vers

zodat we de strategie van de
organisatie mede vormgeven

Met aandacht voor

* wederzijdse relaties en coöperatie
met stakeholders

PART II Sustainable Entrepreneurship in Practice

“We are going to change the fate of humanity, whether you like it or not.”

Greta Thunberg

3 Phases of sustainable business model innovation: organizational responses in a hybrid organization context^{9,10}

Existing hybrid organizations are put under pressure to transform their business model to meet new social and environmental goals while assuring financial sustainability. However, organizations with a strong social mission might be reluctant to change, having structured their business model to meet a particular social goal. Through an ethnographic study at a Dutch social housing association introducing an energy-neutral house as a new product, we investigate the key stages and enabling mechanism for a sustainable business model change in which the social and environmental logics are conflicting. We analyse the underlying causal mechanisms in the process of sustainable business model innovation. We show that the mechanisms responsible for organizational inertia in its conventional (negative) connotation, may enable the intended positive and enduring social and environmental change.

⁹ This chapter is based on: Greco, A. and De Jong, G., 2018. Organisational inertia for positive social change: Theory and Evidence from a Housing Association. In *Academy of Management Proceedings* (Vol. 2018, No. 1, p. 12353). Briarcliff Manor, NY 10510: Academy of Management.

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3.1 Introduction

Hybrid organizations combine public, private, and voluntary organizational logics, through mission-driven business (Battilana & Dorado, 2010). These are social purpose organizations (SPOs) and can include traditional non-profits, social enterprises, socially responsible for-profit businesses, and different types of public-private organizations (Ebrahim et al., 2014; Jay, 2013). These types of organizations address some of the most urgent problems of the 21st century, such as climate change or persistent poverty. Scholars have described these as ‘wicked problems’ (Rittel & Webber, 1973) or, more recently, as ‘grand challenges’ (Ferraro et al., 2015). The nature of these challenges forces hybrid organizations to quickly adapt to meet new sustainability demands (Peko, Dong, & Sundaram, 2014).

However, for SPOs one of the main challenges is to remain true to their mission, while simultaneously being able to change and innovate (Young & Kim, 2015). Organizations with a strong social mission might be reluctant to change, having structured their business model to meet a particular social goal. In fact, at the organizational level, inertia is considered to be one of the greatest barriers for sustainable development of existing organizations (Stål, 2015). Understanding whether and how hybrid organizations successfully adapt to change is crucial, yet seldom addressed in the literature (Zollo, Cennamo, & Neumann, 2013).

To do this, this chapter focusses on sustainable business model innovation (SBMI) (Geissdoerfer, Vladimirova, & Evans, 2018) in the context of a non-profit hybrid organization (Haigh, Kennedy, & Walker, 2015) that combines the logic of a highly regulated and hierarchical public bureaucracy with the DNA of a social enterprise. Business model innovation (BMI) concerns the transformation of one or more of the business model aspects. These include value proposition, value creation and/or delivery, and value capture (Bocken et al., 2014). For mainstream organizations, business models define how competitive advantage is achieved (Zott, Amit, & Massa, 2011). Instead, sustainable business models incorporate the three pillars of people, planet, and profit (Bocken et al., 2014) known as ‘the triple bottom line’ (Elkington, 1997) value creation. According to the existing literature, hybrid organizations design their business models to create value that is beneficial for society (Santos, Pache, & Birkholz, 2015).

It is suggested that organizations already addressing sustainability challenges are more prone to sustainable BMI (Weissbrod & Bocken, 2017). However, whether this applies also to highly regulated and hierarchical hybrid organizations is still unclear.

The objective of this research is to understand how these types of organizations simultaneously address environmental, social, and financial sustainability in BMI. We pose the following question: **How can highly regulated hybrid organizations induce and maintain sustainable business model innovation?**

To answer this question, we adopt an inductive theory building approach. We conducted an in-depth analysis over a period of 22 months of a 100-year-old social housing association which is front runner in the energy transition of Dutch dwellings. These types of organizations are typically averse to strategic change and are prone to a regime of inertia, due to their age and the type of service provided (Barnett & Pontikes, 2008). Despite being an independent type of hybrid organization, their service has been highly regulated (Boelhouwer, 2007). Moreover, Dutch housing associations are organized with a vertical hierarchy (Gruis, 2008), which amplifies organizational routines responsible for inertia (Annosi, Martini, Brunetta, & Marchegiani, 2018). This is the case of an established hybrid organization, with a social mission, integrating climate mitigation measures as a new, core strategy. In order to implement this strategy, a new product is introduced: the energy neutral house. For the type of houses owned by the housing associations, the technological solutions to transform them into energy neutral houses are new and costly. Moreover, a number of social challenges arise among the housing association's target group, such as increase of poverty, refugees' request for housing and aging tenants.

By retrospectively analysing how the sustainable business model innovation occurs, and the key factors influencing it, we contribute to the existing literature in different ways. Firstly, we investigate the internal organizational mechanism involved when balancing the triple bottom line in BMI, showing that conflicts and resistance to change are instrumental to achieve balance. Secondly, we contribute to the literature on hybrid organizations, which mainly addresses the conflict of two demands: financial versus social (Watson et al., 2018). Besides this conflict, the case organization chosen for this study is also dealing with two conflicting social goals: environmental integrity versus social equity. Lastly, with this case-study, we propose the existence of a relationship between organizational inertia (Hannan & Freeman, 1984; Kaplan & Tripsas, 2008; Kelly & Amburgey, 1991) and sustainable imprinting (Di Vito & Bohnsack, 2017). By doing so we answer the calls for more empirical understanding of inertia and its relationship to sustainable change at the organizational level (Stål, 2015). The outline of this chapter is as follows: we begin by introducing the concept of sustainable BMI in existing organizations. Next, we present the method and the characteristics of the case organization. We then report our results. We structure them according to the

phases of BMI identified, offering propositions for each phase. We conclude by discussing the implications of our study and possible avenues for future research.

3.2 Literature review

3.2.1 Sustainable business model innovation in existing organizations

In this section we review the main factors responsible to initiate and maintain the process of SBMI in existing organizations. Particular, we discuss the role of leadership and sustainability drivers for change.

3.2.1.1 Leadership to induce SBMI in hierarchical organizations

Extant literature suggests that sustainability-oriented BMI is explicitly linked to sustainable entrepreneurship (Weissbrod & Bocken, 2017). The literature also refers to entrepreneurial leaders as change agents for an organization's sustainability (Falle, Rauter, Engert, & Baumgartner, 2016). However, executive leadership driving innovation is not sufficient to ensure success (Lukoschek, Gerlach, Stock, & Xin, 2018). The leadership influence needs to be considered in relation to the organizational structure. Aguilera et al. (2007), for example, position employees as a decisive force initiating and driving positive social change. In downward hierarchical organizations, such as our case study, top management teams have the most influence on social change (Aguilera et al., 2007).

In general, and for hierarchical organizations in particular, inertia at the organizational level is considered to be one of the greatest barriers for sustainable change (Stål, 2015). In physics, inertia is the resistance of a physical object to any change in its state of motion or rest. In organizational change, agility and flexibility are regarded as the panacea for organizations to survive in a constantly changing world, and these are antonyms of inertia (Boyer & Robert, 2006). Although research on the relationship between sustainable BMI and inertia is limited, it is suggested that the creative destructive force of sustainable entrepreneurs (Dean & McMullen, 2007) is key to answer pressing environmental challenges and to fight inertia (Stål, 2015).

Generally speaking, entrepreneurial change, targeted towards BMI, in established organizations is instrumental to achieve competitive advantage (Morris, Schindehutte, & Allen, 2005). However, these premises have been made for organizations operating in competitive environments. In contrast, sustainable business model innovation in mission driven businesses, can be seen as the proactive process of innovation and risk taking to address social

and environmental problems. We use the word “proactive” in antithesis to “reactive” (Aguilera et al., 2007), this being more in line with the discipline of social entrepreneurship and social value creation (Weerawardena & Sullivan Mort, 2006).

3.2.1.2 SBMI in mission-driven business

Change in hybrid organizations, can originate from different motives: “Unlike product or industry categories, prosocial categories are based on abstract concepts of shared values instead of more concrete characteristics related to organizational capabilities, product offerings, and audience preferences” (Conger, McMullen, Bergman, & York, 2018). In organizations that combine different institutional logics, change results in novel combinations of capital (Nicholls-Nixon et al., 2000) and conflicting demands (Pache & Santos, 2010). A stream of literature indicates that hybrid organizations (Battilana & Lee, 2014) are prone to change when solving complex problems and grand challenges. For sustainability-oriented innovation, hybrid organizations strongly rely on stakeholder engagement (Watson et al., 2018).

Despite the knowledge available on drivers for sustainable change and innovation, fewer contributions discuss what makes the innovation last. For new ventures, it is argued that sustainability drivers can persist because of sustainable imprinting occurring during funding conditions, in which founders’ attitudes, beliefs, and values leave a lasting mark, influencing future decision making (Di Vito & Bohnsack, 2017). Values, leadership, culture, strategy, structure, and policies (Herrera, 2016) are considered key institutional factors for lasting social impact.

However, how these factors operate at the organizational level and whether a temporal order exists in the process of sustainable BMI, is not yet clear. By investigating a process query, we contribute to the understanding of a temporal sequence of the mechanism for BMI in hybrid organizations in which the institutional context, organizational structure, and social mission are barriers for SBMI. In the following section we introduce the case organization and explain what aspects of the business model were innovated.

3.3 Research Context and Method

For the purpose of this study we study a housing association, hereby named Alpha, as an exemplar, institutionalized, and well-established type of hybrid organization (Nieboer & Gruis, 2016). Housing associations are private, non-profit organizations providing low-income tenants with affordable housing (Dewick & Miozzo, 2004). Alpha has approximately 200 employees, and owns and manages a portfolio of about 20,000 houses, situated throughout the Northern part of the Netherlands. Alpha was founded over a century ago

and is one of the first housing associations funded in the Netherlands as a social enterprise. Its initial goal was to provide better working conditions to industrial employees through housing. With the Housing Act of 1921, housing associations became legally established.

This case presents specific characteristic which make it an interesting case through which to explore BMI in hybrid organizations. Firstly, this housing association introduced the energy neutral house as a new product. Secondly, given the social housing market in the Netherlands, housing associations do not compete with each other. This is due to the fact that social housing users cannot choose between housing associations, unless they relocate to a different area. Hence, the decision to introduce the new product was neither driven by market pull nor by supply pull, which often are associated with successful green innovations (see, for example, Horbach, Rammer, and Rennings (2012)). This case addresses the key grand challenges (Ferraro et al., 2015) of climate change and social inclusion, for which unique cases, like Alpha are appropriate for the development of new theoretical insights (Eisenhardt et al., 2016).

3.3.1 Data Gathering and Analysis

Given the exploratory nature of the research question, we use an inductive, theory building, case study approach (Eisenhardt, 1989) adopting an ethnographic method (Fetterman, 2010). The first author was given a working desk at the department of “strategy & environment” (S&E), where the management offices are located. Such a setting provides a strategic research site (Merton, 1987) for addressing the question posed above.

Our approach is grounded in data, due to the sense-making nature of the research question. This implies that we have approached the field with an interest in the “themes, categories, activities and patterns in the natural variation of the empirical data, not from a pre-given theoretical framework or a set of pre-formulated propositions” (Eriksson & Kovalainen, 2015, p. 129). As indicated by Strauss and Corbin (1994), when adopting a grounded theory approach, the following issues need to be taken care of: choosing a problem and stating the research question; maintaining a balance between objectivity and sensitivity; and using the literature to verify assumptions.

Before starting with the participant observation, and with the intention to investigate a process-query, we used a variety of data collection methods, including official and internal documents, interviews, and participant observation. We started with interviewing the members of the strategy department and proceeded following the interviewees’ suggestions for

important meetings and stakeholders to interview, through snowball sampling (Patton, 2002).

In total, the first author attended over 110 events (including workshops and meetings) as a participant observer, of 64 full days in total, and 32 confidential organizational archival records (see Table 3.1). The simultaneous methodological combination of retrospective and real-time data gathering techniques is key to mitigate a bias risk of retrospective interviews and archival data collection (Eisenhardt & Graebner, 2007).

The initial interviews enabled a retrospective analysis, making sense of the events that occurred before we began with participant observation. We asked the interviewees to describe the time when the new energy neutral ambition was introduced, and the mechanism involved in the change. We also asked them to describe the way they perceived strategic changes and how they reacted. With the more experienced employees, we investigated the company's drive before the energy neutral target was set, making sense of the primary social and financial goal of the organizations.

Our data analysis progressed with theoretical sampling (Strauss & Corbin, 1994), including company' stakeholders and the interim director. The interviews were exploratory in nature, intended to explore the motives, opinions and mechanisms – as narrated by the employees – behind the transition process. Our goal was to analyse the situation prior to the start of our field work and the introduction of the energy-neutral target.

Figure 3.1: Alpha's organizational development and research observation period.

As shown in Figure 3.1, the observation period started in February 2017 and lasted for a period of 24 months. The participant author's role was one of an interested researcher, willing to help the department with her knowledge on sustainable buildings and related inhabitant engagement techniques. This meant attending weekly department meetings, monthly thematic meetings, periodic updating sessions, and different internal and external activities of the company. The contribution expected by the organization implied occasional support to the innovation manager and the strategy manager. This position assured full integration within the company, being registered as regular

employee and having access to the internal database, the digital communication platform and all the company facilities. Throughout the informal conversations, each employee was very keen to share information, updating the participant researcher about events and key projects. We believe such “openness” was facilitated by the specific role of the participant researcher. Her role and background encouraged the general trust that her work would be valuable for the organization.

The participant researcher was subsequently asked to engage in the strategic meetings and workshops, undertaking a more active role. This is because the CEO wanted to investigate whether and how energy-neutral houses could become a means for tenants to generate income. We are aware that the simultaneous combination of action research and ethnographic principles can lead to interpretation bias. Therefore, we relied on triangulation techniques, referring to archival data for factual checks. Additionally, throughout the iterative process between data and theory, the participant author reported her findings and general developments to the non-participant author on a weekly basis. The purpose was to enable reflectivity about her impact.

The participant author took field notes for each meeting in her field journal. To increase reflexivity (Takhar-Lail & Chitakunye, 2015) and maintain a balance between objectivity and sensitivity, the field notes have been exchanged with a colleague researcher and the coding of the data verified by a third scholar.

Accessing the portfolio plans of the past years and project proposals helped us to draw the historic time-line in a retrospective manner. Archival data were important for the retrospective and the ethnographic parts of our research. The participant researcher received regular departmental emails and was included in the instant message phone application group. By observing discourses and updates in real time on a daily basis, we had the opportunity to include these observations in our analysis. Hence, we followed the principles of “ethnography on the net” known as nethnography (Kozinets, 2010) to include online observations as an integral part of the ethnographic study.

The analysis was performed alongside the data collection process. The first author imported interview transcripts, filed notes, scans of relevant documents, digital documents and online discussions in Atlas.ti, version 8.0. We started with open coding, thus creating a code catalogue during the data analysis, not beforehand. When new themes and new categories emerged, we added them to our catalogue. Once we identified recurrent themes, we started looking for these themes in the literature. We then began an iterative process,

moving back and forth between data and literature. From the first literature search we were already able to add second order codes.

Table 3.1: Overview of the analysed qualitative data.

Interviewees (9)		# of interviewees
S&E manager		1
Relation manager		2
Communication manager		1
Innovation manager		1
Interim director		1
Asset manager		1
Portfolio manager		1
Related initiatives outside the region		1
Selected Archival records (32)		# of documents
Strategy documents		9
Portfolio plan		2
Neighbourhoods master plans		3
Business plan		4
Project proposal		7
Internal presentation		7
Observations (110)		# of events
Strategy meetings	Sporadic	7
Thematic meetings	Every 4 weeks	9
S&E meetings	Weekly	32
Observation in office (7-8 hours/day)	2 times per week	62 days

3.4 Results

3.4.1 SBMI in Alpha

Within the Dutch pool of housing associations, Alpha is considered a frontrunner with respect to environmental targets. In 2015 they had set an ambitious environmental goal: 100% energy neutral building stock, exceeding the Dutch National Energy Agreement that set the goals for housing associations to transform their stock to achieve energy label B by 2020 and energy neutrality by 2050 (Tambach, Hasselaar, & Itard, 2010). Their energy-neutral campaign statement was “one house per day”. To meet this target, Alpha also intended to reduce the number of dwellings offered.

In 2015 they refurbished 568 houses meeting energy-neutral standards. Alpha’s ambition was well-known in the market. As stated by a representative of the Energiesprong –a consortium operating in the UK, France, Denmark and NY State, to establish appropriate market conditions for the wide-scale introduction of energy neutral homes–: “We didn’t need to include Alpha in our program, they were already ahead of everybody else”.

3.4.2 Phases of Change

Focusing on how the environmental target had been induced and maintained, the data indicated that a movement for environmental change had begun already before the setting of the energy neutral target. As we went on with our analysis, it became clear that, despite several opposing forces continuing to manifest, this movement seemed to be unstoppable. In the following sections we describe the mechanisms that, according to our analysis, contributed to the BMI within Alpha.

With this study, we identified three fundamental phases preceding the transition to a new inertia state. We name these phases: induction, resistance, and preservation.

Figure 3.2: Implementation of sustainable interventions at Alpha.

3.4.2.1 Phase 1: Induction

The first phase of induction of the SBMI revealed the role of Alpha's CEO as central. At the start of our research, Alpha was already working towards meeting the energy-neutral target. Personal experience and events triggered the former CEO to design and implement the energy-neutral target. This included his travel in a small town in the US where he "*discovered a new sense of community [...] I decided I should be doing what I think is right instead of what others expect from me [...] our children will ask us: what did you do when you were still on time?*". Before setting the energy-neutral target, Alpha already engaged in a variety of activities related to sustainability including community engagement activities, a co-creation lab with the tenants, sustainable experimental houses, and eco-friendly neighbourhood interventions.

Although the environmental drive might have been one of the main reasons behind the induction of the BMI, our interviewees also named other drivers supporting this choice, most importantly political motives, institutional trends, and public image, as showed in the following example quotes.

Manager B – *It was ex-CEO to come up with this idea. He said during a pizza-session that he did not want The Netherlands to be dependent on Russia's gas and the other argument was that in 2030 we will have nice, energy-independent houses where people would pay the same rent they would pay for much uglier and less energy efficient houses from Beta [laughter] but I know he had many more arguments. He wanted to lower the energy bills for our clients so to decrease the risk that people couldn't pay the rent.*

Manager A – *From the outside we looked very sustainable but inside we had a long way to go, it was really hard to agree. [...] But then all of the sudden we got to a turning point. Our director had built a strong network with partners working on sustainability, such as the circular regional consortia and other construction companies, and then here it was in the portfolio plan 2015: by 2030 all our houses will be energy neutral. [...] Yes, our ex-CEO would say before that it was important but it was a game he won with the right combination of puppets. For example, the "housing manger" which was strongly against the energy neutral goal left the company... I think the ex-CEO was influenced by our partners and he then saw that it could actually mean something for us.*

Manager C – *People have more the idea that our public image became much better since 2015.*

Contextual factors are mentioned multiple times as influential for the new vision of the ex-CEO supporting the induction phase more than economic or technical explanations (Bansal, 2005). Because energy neutral houses are currently considered too expensive and still at experimental stages of development, the CEO built a partnership of construction companies willing to experiment with new technical solutions and to monitor the energy efficiency and comfort over time to improve the quality of the interventions.

Manager B – *We have too little experience. We have just started but because we are focusing so much on the production, we are not giving ourselves the time to learn about the process. There are so many technical options, but we have picked just one, without learning from previous experience. We didn't even monitor one year of renovation that we have proceeded with refurbishing other hundreds of houses in the same way. We should at least check that our solutions work throughout each season. We don't give ourselves the time.*

Manager C – *that's how innovation works, if you are ahead of times, it costs too much, if you are behind, you missed the boat and we could say that we don't do it, but we chose otherwise.*

We also identified drivers reported in the studies of green and social entrepreneurship, such as “doing good” (O’Neil & Ucbasaran, 2016). In the case of Alpha, clients’ preference and capabilities arguments would push the organization in the opposite direction.

Manager C – *Our ex-CEO thought that it was about people planet and profit, we help the people through energy efficient homes and we also invest in innovation [...] There are many goals in this ambition: we do something for the planet, for our vulnerable target group and for us. Because if we only improve the house and get to an energy label B, then we have to do it again after a few years because in 2050 we have to be energy neutral... we’d better do it all at once! [...] it is the difference between short term and long-term thinking. What favour would we do to our tenants if we need to refurbish the houses again?”*

The characteristics that we identified above, are delineated in the following propositions:

Proposition 1a: When the innovation at stake is still in the development stage, building support outside the organizational boundaries, is a necessary but insufficient condition to initiate the process of sustainable business model innovation.

Proposition 1b: In a downward hierarchical organizational structure, entrepreneurial leaders with an environmental or social drive can induce the sustainable business model innovation process, irrespective of the organization’s internal capabilities and internal legitimacy.

Changes in the organization structure

A strategy and policy department of Alpha was created in 2013. In 2016 the department was restructured and renamed as the strategy and environment (S&E) department. Our interviews confirmed that the change in strategy was mainly induced by the CEO. The strategy department hired a new innovation manager in February 2017. Simultaneously the participant researcher started as intern, followed by a second PhD researcher 9 months later. These hires are intended to explore the role of housing association in fighting poverty together with new business models for sustainable houses. The S&E and the customer service department are focusing on customer’s issues, while the task of the asset manager is to ensure the feasibility of the plans. To facilitate collaboration across different disciplines, Alpha based the organizational structure on the organizational model suggested by Van Os (2007) for Dutch housing association. See Figure 3.3 for a representation of the structure.

Figure 3.3: Alpha's organizational structure.

This model divides the organization in three main levels: strategic, tactic, and operational. Their tasks are respectively: developing the portfolio plan, managing the asset, and managing the property with the client. The model works in circles of plan, do, check, report, act. The S&E department is positioned at the strategic level. The idea behind this model is that such structure and process ensure a good balance among bricks, people and money (van Os, 2007). Alpha has followed this organizational model to locate the departments among the four floors of the head office building. However, some of the employees we interviewed believe this floor division runs against the goal of the model and “creates coalitions”.

3.4.2.2 Phase 2: Resistance

After the induction imposed in the portfolio plan, our data reveals a resistance to accept the environmental target from the majority of the employees and managers. However, the resistance was insufficient to stop the change from happening. The introduction of the environmental transition by the ex-CEO was followed by disagreements among managers from different departments. Although the change was established as operational once it was incorporated as a directive in the portfolio plan, the conflicts did not stop. From 2015 onwards, the energy neutral plan entered into force. Only two years later, the CEO resigned and, 6 months later, the S&E manger also resigned.

We identified conflicting identities that manifested in two ways: between departments, and among the different pillars of the triple bottom line. In the next sections we introduce these.

Internal conflict between departments.

Internal conflicts are a recurrent theme in our analysis of Alpha. They are present before and after the environmental target was “prescribed” in the portfolio plan as a way to set the environmental goal in a directive manner.

Employee A – *We had to frame our ambition in a closed way: that’s what we are going to do, full stop. Otherwise we would have kept discussing forever without getting anywhere.*

Employee B – *I still see that people have problems accepting it and I fully understand because it is an enigma how to make it affordable.*

Employee A – *If these managers only worried about bricks and prices, they could not look anywhere beyond, we needed leadership.*

Manager D – *Company strategy is a different issue than real estate policy and customer policy or customer service. And I feel that the portfolio-plan is often experienced as the organization’s strategy. That is not our strategy. If you talk to some managers they will say “We do have a strategy” But that is not a strategy, that is our portfolio-plan [...] the model we follow brings together people, bricks, and finances.*

Our analysis revealed a social entrepreneurial identity (Conger et al., 2018) in the strategy and the service and client departments, resonating the input and influence of the former CEO. Other departments displayed a different orientation, associated with phrases such as “It costs too much” or “It is not technically feasible”. These departments report to a different director, as shown in Figure 3.4. Since October 2016, the asset management department reported directly to the CEO while previously it reported only to the CTO (see Figure 3.4). This suggests that the organizational structure and reporting lines co-determines the implementation and acceptance of the new strategy.

Figure 3.4: Alpha's organizational structure (2017), interviewees' statements are divided between social and financial arguments.

Despite the employees' difficulties in following the environmental target, the entrepreneurial leaders' direction had to be followed by the "opposing" departments, while the S&E claims to have influenced ex-CEO towards more prosocial arguments.

Conflict among people, planet and profit.

For Alpha, refurbishing all houses to meet energy neutral standards implied that the total housing stock needed to be reduced drastically (planet against profit). The divestment of a part of Alpha's housing stock was needed to fund the costly zero energy refurbishments. Demographic changes, such as aging of the tenants, and cities' gentrification were also forcing Alpha to reorganize its assets, working in favour of the zero energy plans. This divestment was contradicting earlier intentions of the ex-CEO when he decided to grow the association's assets.

Ex-CEO (during his farewell party) – *When we merged with Alpha, we became the largest housing association in the region. Beta refused to join us, screw them [laughter] otherwise we would now be the biggest of the country.*

The focus on the profit pillar of the triple bottom line – not only by assuring survival and continuity, but even by growing the asset – shifted to the planet pillar with the 2030 energy neutral ambition. However, apart from finding it

in the portfolio plan, we did not encounter extensive pro-environmental arguments supporting the 2030 ambition. Social and strategic arguments were mostly used to support the new portfolio plan.

Manager E – *We are not designing it (house) for our clients of today, we do it for our clients of tomorrow.*

Manager A – *Other housing association are only doing minor interventions, like a solar panel on the roof, but our intervention is comprehensive and future-proof, saving us from having to do it all over again in a few years' time. Other housing associations are now starting to follow our example.*

Since the first housing renovation projects, a number of clients have complained about the interventions. Whether the complaints are mainly due to bad management of the interventions or to an unsatisfactory product is still unclear. However, some employees do perceive that the energy neutral goal might go against the core mission of the company (planet against people), while the ex-CEO would justify the goal as “doing something good for them”.

Employee D – *We say that we stand for the tenants, but to reach the energy neutral goal we might need to increase their rent, within the allowed limits of course, or move them to new houses and we forget that they are a vulnerable target group.*

Employee C – *We see it is becoming more and more difficult, our tenants earn less and less and the new regulation force us to pay more taxes.*

Ex-CEO – *They (tenants) don't see the potentials of it, they just don't know [...] I want to get the cost down for our tenants [...] If you make them saving energy than you help them reducing their monthly expanses, it doesn't mean their rent has to increase.*

Hence, we identified conflicting identities – between departments, between individuals' tasks and the organization's role, and between the different pillars of the triple bottom line – lead us to the following proposition:

Proposition 2: When top management proposes or imposes a change which strongly favours one of the three pillars of the triple bottom line, internal conflicts and resistance, which fuel inertia, facilitate the overall triple bottom line balance.

3.4.2.3 Phase 3: Preservation

After the resignation of the ex-CEO, an interim director was appointed by the supervisory board for a period of 9 months.

Interim director – *This company had become the ex-CEO's enterprise. It is bad that one director can have so much influence on an organization, but it is what it is. Now we*

know it and every 4 years the supervisory board has to renew the CEO's position and align his vision to the mission of the organization [...] 17 years were way too long.

The implementation of the energy neutral plans induced many opposing forces. These continued and even increased once the ex-CEO resigned.

The main opposing forces we identified included poor environmental performance, dissatisfied clients, high investments with low returns, and internal conflicts. In November 2017, AEDES, the Dutch society of housing associations, published a benchmark on the associations' performance. Alpha scored low on sustainability, energy efficiency and emissions. This could be explained by the fact that other housing associations chose for moderate strategies with lower ambitions than Alpha and less expensive energy efficiency measures, allowing for sizeable and faster implementations. Apparently, this resulted in a better environmental performance compared to Alpha.

The structure, the attachment to routines, and the resistance to change we encountered in our analysis, suggest that in this organization a regime of inertia is predominant (Hannan & Freeman, 1984; Kaplan & Tripas, 2008; Kelly & Amburgey, 1991).

Employee A – *We had difficulties inside, there were people against it. They would say that they had always done their work in the same way, so why should they change?*

The month prior to the ex-CEO's resignation was announced, he had initiated new strategy trajectory workshops aimed to update the strategy with a focus on Alpha's client wellbeing. These workshops were guided by an external consultant and intended for the top management team. The CTO, the interim director, and Alpha's supervisory board strongly opposed the continuation of these workshops indicating "we should wait for the new CEO to make any decision". The S&E department, however, suggested that Alpha should have a clear vision before welcoming any new CEO and that employees should show leadership instead of waiting for new directives. Although the trajectory was continued, its goal shifted from that of strategy design to one of envisioning.

Manager F – *This is our opportunity to show the world that this isn't ex-CEO's vision but this is 100% Alpha's vision.*

While the initial social goals of the trajectory were mentioned to fade away and "will never become concrete" (manager G), the new environmental target induced by ex-CEO was no longer a point of discussion.

Interim director – *No, the new CEO will not change the energy neutral target, he will have more serious problems to solve and this target is important after all, we need to do it.*

Manager D – *The new model we follow brings together people, bricks, and finances. We are much more than brick-providers.*

In our analysis, the 2030 energy neutral target has often been framed as instrumental to achieve the social mission rather than a driver per se.

Manager D – *Energy neutral houses are a tool to improve our tenants' life, they are not our goal.*

A momentum for pursuing the environmental target was established. These considerations brought us to formulate the following propositions:

Proposition 3a: Organizations where employees, structure, and context have a tendency to generate a regime of inertia, are fertile for the imprinting of a CEO.

Proposition 3b: A sustainable goal can be imprinted on an organization's strategy by an entrepreneurial CEO meaning it remains, even if the CEO leaves the company.

3.4.3 Discussion

Through ethnography, we longitudinally investigated the key stages and mechanisms for sustainable BMI in a social housing association. Our case organization Alpha has been addressing the social and financial pillars of the triple bottom line throughout its existence as a hybrid organization. With the BMI introduced in 2015, a “disruptive change” in a social context was caused by the organization's former CEO (Christensen, Baumann, Ruggles, & Sadtler, 2006) with an entrepreneurial attitude (Dixon & Clifford, 2007; Morris et al., 2005). Before introducing the BMI internally, the former CEO created a network of companies, relying on stakeholders' engagement (Watson et al., 2018) to support the BMI with external legitimacy. When the BMI was introduced internally, conflicting logics appeared and persisted, due to a general reluctance to accept sustainable change (Stål, 2015). However, these conflicts preserved the social and financial sustainability of Alpha, fostering its survival.

In the first stages of our analysis, it became clear that Alpha had been favouring one of the people-planet-profit logics at different times (see Figure 3.2). This finding aligns with Belz and Binder (2017) who, in their study on sustainable ventures, also report that environmental, social, and economic goals are integrated sequentially rather than simultaneously.

Following the CEO's resignation, we were expecting to observe a rejection of the environmental goal previously hindered by the employees, resulting in a new change of strategy by the managers who disapproved of the BMI. This did not happen. The asset managers continued expressing doubts about the

financial and organizational feasibility of the target but did not foresee any change in this respect. Alpha's clients and employees did not appreciate the new environmental measures. Instead, they clearly expressed that Alpha should take care of more urgent priorities. However, the institutional and organizational context of Alpha's stakeholders and the media positioned Alpha as a front runner for environmental targets. As a result, the environmental target persisted, despite the resignation of the CEO.

The concept of inertia and inertia theory (Boyer & Robert, 2006; Dean & Snell, 1991; Hannan & Freeman, 1984; Kaplan & Henderson, 2005) appeared suitable to analyse the process and outcome of Alpha's business model innovation. Hannan and Freeman (1984) introduced the concept of employee inertia, explaining that employees "generate strong pressures against change because organization members seek to maintain the status quo that protects their interests" (1984, p154-155). The determining characteristics that give an organization stability also generates resistance to change (Kelly & Amburgey, 1991). In a similar vein, Kaplan and Tripsas (2008) also recognize that inertia (which is often caused by routines) can be broken by entrepreneurs who see the world with different lenses.

The case of Alpha shows that a defining momentum for pursuing environmental targets can be established; an observation which is supported by imprinting theory (Boeker, 1989; Stinchcombe & March, 1965). Imprinting refers to the persistent influence of a founder on the strategy and behaviour of an enterprise (Bryant, 2014; Nelson, 2003). Imprinting and inertia are both addressed in the literature as characteristics that oppose organizational change (Hannan, Baron, Hsu, & Koçak, 2006). The type of individual that is able "to leave a lasting mark on a broad field" (Marquis & Tilcsik, 2013, p. 212) is considered the entrepreneurial leader; in the case of Alpha, the ex-CEO. In our case, however, imprinting and inertia appear to act against each other, with imprinting mechanisms unlocking organizational inertia and fuelling it at a later stage.

Hybrid organizations such as housing associations can be difficult to change because of their mission, structure, and semi-governmental function. Nevertheless, our case organization shows that once they have successfully changed, they tend to enter into a new state of inertia. As argued by Boyer and Robert (2006), "today's inertia may be the result of a commitment necessary to implement change at some earlier date" (Boyer & Robert, 2006, p. 325). Change in non-agile organizations, such as public bureaucracies, might require the promise of future inertia (Boyer & Robert, 2006). Our study proposes that the mechanisms that fuel inertia might also be the ones

enabling long-term positive social and environmental change following the process of sustainable business model innovations.

3.5 Limitations and Implications

The phenomena tackled in this research are complex (Berger & Kuckertz, 2016). The in-depth understanding of the BMI process, where the interplay between poverty alleviation, climate change, and financial solution played such an important role, called for a longitudinal research approach, while attempting to simplify the systematic analysis of theory and practice. Hence, our study presents the limitations of a single case study research, in which empirical observations might relate to the unique features of the case company. For example, Alpha introduced the energy neutral house as a new product in a market free from competition, for mission-driven reasons. Future research may study whether and how differences in triggers and contexts matter for the inertia features we identified here. Other types of SPOs may face different institutional constraints and dynamics in their context. That said, our longitudinal case study provides evidence useful to compare the change process between mainstream and hybrid enterprises when leadership is found to be a key factor for BMI, offering a point of departure for new questions and future research. Whether and how imprinting and inertia originate from the lack of CEO turnover, rather than from the organizational type and service provided, deserves more research. This would enable highlighting the role of leadership in sustainable BMI. Also, the social DNA of this type of organizations might influence the way the triple bottom line is balanced. For instance, how are organizations with an environmental DNA integrating new social demands in the process of sustainable business model innovation?

The findings of this research offer guidelines for local government when promoting positive social change for organizations inherently known to be change resistant. External legitimacy in particular was found to be a prerequisite to internal changes in the induction phase. Prior research suggests that all organizations should be agile, innovative, and continuously open to change (e.g., Annosi et al., 2018). Although we support this view, our study suggests that this is unlikely for mission driven and institutionalized hybrid organizations. In other words: is it realistic or even desirable to change all existing organizations, profit and non-for profit, governmental and non-governmental, into agile ones, always ready to innovate and transform themselves? The positive effects of inertia reported in this study might suggest otherwise. Hybrid organizations reluctant to change can benefit from their intrinsic mechanisms of inertia, in order to successfully create enduring positive social change.

“It is an acknowledged fact that we perceive errors in the work of others more readily than in our own.”

Leonardo da Vinci

4 Identity Reflexivity: A Framework of Heuristics for Strategy Change¹¹

Organizations pursuing a sustainability-oriented mission are often characterized by a dual goal, such as the need for financial viability versus the solving of social and environmental problems. A dual goal, often, results in a dual organizational identity. The literature on hybrid organizations shows that these two identities –normally a financial and a social identity– can be conflicting. Understanding how managers with conflicting identities achieve agreements is important to help organizational leaders to pursue sustainability-oriented strategy change. Simultaneously, one of the main debates on heuristics –intended as cognitive simple rules and biases which guide decision making– concerns whether there is a relationship between heuristics at the organizational and individual levels and its (lack of) effects on strategy. To join this debate, we investigate the relationship between (dual) organizational identity and individual heuristics in the process of strategy change. Through participant observations, we took part to the design process of a new strategy undertaken by the management team of a Dutch housing association.

We find that conflicting identities at the individual level influence heuristics at the organizational level, for example through conflicting interpretations, since managers tend to identify with their departments' identity. Despite conflicting interpretations, paths of cognitive shortcuts –that we define as internal and external identity reflexivity– are shared by the conflicting identities. This chapter offers a theory on identity reflexivity as cognitive mechanism of strategy design in the context of hybrid organizations.

¹¹ This chapter is based on Greco, A., Long, T., de Jong, G., 2019. Identity Reflexivity: A Framework of Heuristics for Strategy Change in Hybrid Organisations. In *Academy of Management Proceedings* (Vol. 2019, No. 1, p. 14778). Briarcliff Manor, NY 10510: Academy of Management.

4.1 Introduction

Social enterprises address some of the most urgent problems of the 21st century, such as climate change adaptation and persistent poverty (Zahra et al., 2009). Organizations addressing these challenges, often deal with a dual goal (Yin & Chen, 2019), such as an economic and a social goal, which, within the organizational boundaries, results in a dual organizational identity (Moss, Short, Payne, & Lumpkin, 2011). In some instances, these identities might be competing, as illustrated by hybrid organization scholars (Battilana & Lee, 2014; Besharov & Smith, 2014). This is often due to tensions between coalitions of organizational members supporting different logics –such as a financial logic, intended to sustain the organizations’ economic stability, conflicting with a social-welfare logic. In this context, conflicting external demands and competing internal organizational identities challenge the decision-making process of dual-goal organizations (Jay, 2013).

Regardless of the hybrid character of an organizations, when strategic decisions endeavour change towards sustainability-oriented practices, cognitive diversity of organizational members can hinder change (Hahn et al., 2014). We argue that in the context of a dual goal organization, this might be due to the dual-identity orientation of the organizational environment, which could result in different heuristics among individuals to make sense of complexity. Heuristics are simple cognitive rules used to explain how individuals make decisions and solve problems (Kahneman, Slovic, & Tversky, 1982). An ongoing debate concerns to what extent there is a relationship between heuristics at the organizational and individual levels, and whether such relationship affects strategy (Loock & Hinnen, 2015; Vuori & Vuori, 2014). To join this debate, we seek to understand the relationship between (dual) organizational identity and its effects on individual heuristics in the process of strategy change. To this end, this research investigates what types of heuristics occur in the strategy change process of a socially driven organization, and whether different organizational identities share heuristics.

Given the urgency of social and environmental challenges, socially driven businesses are increasingly pushed to pursue diverse sustainable development goals. Thus, it is important to understand how these organizations adapt their strategy to meet new social missions. In order to study the nexus between organizational identity and individual heuristics when strategic decisions aim to integrate new sustainability demands, we propose the following question: **How does a dual organizational identity influence a manager’s heuristic in the process of strategy design aimed at achieving a new sustainability goal?** This question is especially important when decisions are taken to pursue sustainability challenges. In fact, the nature of these

challenges forces existing organizations to continuously adapt to change (Peko et al., 2014) and to tackle new sustainable development goals over time.

We study this phenomenon in the setting of a social housing association in The Netherlands. The role of housing associations is to house those who are not able to afford appropriate dwellings, due to low income or impairing health conditions. Because of their important role in the Dutch economy, social housing associations are increasingly pushed to address nation-wide social challenges. These include climate change, refugees request for housing, and an aging population.

By means of participant observations, interviews, and archival data we analyse how managers use heuristics to make sense of conflicting sustainability demands while designing a new strategy. Our research started in January 2017 and lasted for a period of 2 years. Adopting an abductive approach, we draw from the heuristics and identity theory literature to understand how managers shift their focus to different sustainable goals and make strategic decisions. We took part to the process of forecasting and decision-making during a trajectory of strategy formation planned by the organization's management, aiming to anticipate and integrate new sustainable ambitions in a new strategy.

Our findings highlight that, despite conflicting interpretations and visions between two predominant identities, paths of cognitive shortcuts are shared by the conflicting identities. We structure the chapter as follows: first, we introduce the theoretical background on heuristic and its link to organisational identity. We then explain the context, the motives behind our research approach, and the method. Subsequently, we show our findings and a set of propositions to guide future research. This leads to a theory section in which we propose the process of identity reflexivity as a framework on the heuristics occurring in the process of strategy design. To conclude, we discuss key implications for practitioners and scholars, and offer avenues for future research.

4.2 Theoretical background

4.2.1 Heuristics in strategy design

It is suggested that in strategic management, two main heuristics categories exist: those learned from experiences with the environment –often unconscious– and those designed by managers and consultant to facilitate decision-making –consciously designed (Bettis, 2017). The theoretical background of this chapter refers to the first type, thus excluding parameters, tools or methods carefully designed to guide strategic decisions.

In psychology, heuristics are simple and efficient rules (Gigerenzer & Brighton, 2009), proposed to explain how people solve problems, make judgments, and take decisions regarding complex matters or incomplete information. The basic principle behind heuristics is that human's cognitive system is limited, and therefore relies on shortcuts to simplify decision-making and problem solving (Kahneman et al., 1982). Although heuristics are considered to be effective in the majority of everyday-life's problems, they are also believed to occasionally lead to erroneous assumptions and decisions (Kahneman et al., 1982).

More recent advancements on the study of heuristics propose a positive view, suggesting that heuristics help strategists to make decisions more effectively. Specifically, fast and frugal heuristic (Gigerenzer, 1992) challenges the view of irrational cognitive biases and conceives rationality as an adaptive tool. When individuals in organizations rely on adaptive heuristics, neglecting certain pieces of information, rather than considering all possible options, it can lead to effective and accurate choices (Gigerenzer & Brighton, 2009; Gigerenzer & Gaissmaier, 2011). Building on this view, Bingham and Eisenhardt (2011) suggest that strategists learn heuristics to make more effective decisions, which are crucial to deal with uncertainty in highly transformative so-called "high-velocity" environments (S. L. Brown & Eisenhardt, 1997, p. 2).

The fast and frugal heuristic, however, has encountered criticism from organizational management theorists (Bettis, 2017; Loock & Hinnen, 2015), particularly for its lack of applicability in the context of strategy (Vuori & Vuori, 2014). Vuori and Vuori (2014), for example, highlight aspects of strategy such as the time frame and the context of decision-making. They argue that for strategy forming the environment is not "high-velocity", since managers dispose of days, weeks or even months to design a new strategy. How environment and organizational contexts affect heuristics needs further exploration (Loock & Hinnen, 2015). Thus, the study of heuristics in different empirical contexts –such as the one of hybrid organizations– is beneficial to the understanding of unrevealed decision-making mechanisms in strategy formation.

Furthermore, one of the ongoing debates on heuristics concerns the relationship between heuristics at the organizational and individual levels and its (lack of) effects on strategy (Loock & Hinnen, 2015; Vuori & Vuori, 2014). To join this debate, we seek to understand the relationship between (dual) organizational identity and its effects on individual heuristics in the process of strategy change. Past research supports the idea that social milieu affects individual decision-making, and that heuristics are learned both as a result of

individual and social mechanisms (Garcia-Retamero et al., 2013). The latter suggests that organizational environments, e.g. stakeholders, networks, departments, colleagues and managers, influence an organizational member's heuristics. With this research, we tackle these aspects proposing a multilevel perspective to heuristics' mechanism of managers in the process of strategy design. In the next section, we introduce organizational identity as a cognitive mechanism related to strategy design.

4.2.2 Individual and organizational identity in strategy design

Like heuristics, organizational identity has been linked to cognitive mechanisms of organizational members (Foreman & Whetten, 2002) and its relevance in decision-making has been widely acknowledged (Gioia, Price, Hamilton, & Thomas, 2010). In particular, organizational identity is considered to play a fundamental role in the process of strategizing, due to its effects on interpretation (Bundy, Shropshire, & Buchholtz, 2013; Gioia & Thomas, 1996). Organizational members' understanding of identity affects members' claims and associated actions, which in turn influences members' understanding (Gioia et al., 2010). Moreover, organizational identities can be seen both as enablers and as barriers to change (Dutton & Dukerich, 1991; Gioia, Patvardhan, Hamilton, & Corley, 2013; Ravasi & Phillips, 2011; Zilber, 2002), because individuals seek both homogeneity and distinction (Smith & Lewis, 2011) in their organizations. Organizational identity considers the question "who are we as an organization?" (Albert & Whetten, 1985). Although identity is claimed to be of little value when making routine or incremental decisions, it is indispensable when making fundamental decisions, such as strategic ones (Whetten, 2006).

In order to understand the relationship between heuristics at the organizational and at the individual level, it is helpful to review the relationship between organizational identity and individual identity. Most recent research suggests that an organizational member's identity is anchored to the environment surrounding the individual. In other words, what "I think" interacts with what "we think" through multi-level dynamic processes across institutional, organizational, and individual levels.

At the individual level, organizational identity can be defined as a reflexive process. Desrochers, Andreassi, and Thompson (2004, p. 62), for example, conclude that "identities have been defined as reflexively applied cognitions about the self-in-role, meaning that our perceptions of our identities are influenced by what we think others think of us". For example, social enterprises' choice to pursue B corps certifications has been explained with the concept of identity reflexivity, where entrepreneurs ask and respond to the question "What does my engagement in this activity (or pursuit of this

goal) say about me?” (Conger et al., 2018, p. 17). In these views, a search for legitimacy plays an important role in the process of identity reflexivity. Organizations that strongly rely on legitimacy, such as hybrid and non-profit organizations, are more at risk of facing an identity crisis (Whetten, 2006). While it is clear that there is a relationship between individual and organizational identity, whether or not a dual identity influences organizational members’ cognition and how organizational heuristics are formed as a result of individual heuristics are still an underexplored area of research to date.

4.2.3 Dual identity organizations

A socially-driven business (such as housing associations) is by its nature characterized by a dual organizational identity (Moss et al., 2011), because it deals with competing demands, such as the need for financial viability versus the need to solving social and environmental problems.

Research on hybrid organizations has largely focused on conflicting external demands and competing internal organizational identities (Jay, 2013), given that hybrid organizations combine identities, forms, and logics that would conventionally not go together (Battilana, Besharov, & Mitzinneck, 2017). An identity-based approach (Foreman & Whetten, 2002) provides a useful lens to study these conflicts since it relates to individual knowledge, competences, and social relations, which all influence one’s decision making process (Wry & York, 2017).

A dual or hybrid identity distribution is often defined by the co-existence of a utilitarian and a normative identity (Foreman & Whetten, 2002) within an organization. Utilitarian identities perceive their organization to be oriented toward economic concerns. Normative identities perceive the organization's character to be oriented towards ideological and value-based concerns. Hence, hybrid organizations (characterized by coexisting utilitarian and normative identities) offer a unique and relevant context to understand whether conflicting identities (that is managers/employees with utilitarian or normative beliefs) can share heuristics and how these two concepts are interrelated. To understand whether and how conflicting identities influence a manager’s heuristics in strategy design, we chose to longitudinally analyse a hybrid organization in transition that is dealing with conflicting social drives, as explained in the following sections.

4.3 Research context and approach

4.3.1 Case organization

This study uses the case of a Dutch social housing association as an exemplar well-established type of hybrid organization (Nieboer & Gruis, 2016). Social housing associations are private organizations providing low-income tenants with affordable housing (Dewick & Miozzo, 2004). In the Netherlands, 70% of rented houses belong to social housing associations, amounting to almost a third of the total residential stock (Centraal Bureau voor de Statistiek, 2017).

The unit of analysis is the management team of the Dutch housing association, hereby named Alpha. Alpha has approximately 200 employees and owns and manages a portfolio of circa 20,000 houses, situated throughout the Northern region of The Netherlands. In 2015, the CEO set the “energy neutral” goal, aiming to transform its entire portfolio to meet the energy-neutral standards. “One house per day” is Alpha’s energy neutral campaign, stating that by 2030 all 20,000 houses will be transformed –either refurbished or demolished and rebuilt– to meet energy neutral standards. In the Netherlands, this goal is ambitious, since housing associations are bound to less strict energy efficiency requirements by the Dutch energy agreement (Sociaal-Economische Raad, 2013).

As a result of the energy neutral goal, Alpha gained visibility as a front runner in the energy transition of social housing in The Netherlands. Between 2015 and 2018, approximately 600 houses have been refurbished or newly built to meet energy neutral standards.

However, as reported by several of Alphas’ employees, the first interventions encountered negative feedbacks from the tenants. In 2016, the CEO therefore decided that it was time to redefine the strategy with a focus on poverty alleviation.

4.3.2 Methodology, data collection and analysis

Through an abductive approach (Dubois & Gadde, 2002), this study adopts the ethnographic method (Fetterman, 2010). One of the main reasons for choosing ethnography to explore heuristics is to observe organization’s members acting in their natural environment. Heuristics in decision-making happens when individuals deal with ongoing everyday-life situations in their natural surroundings (Bodner, Song, & Szulanski, 2019). Heuristics concern conscious and unconscious cognitive mechanisms which result in decisions that can be observed (Gigerenzer & Gaissmaier, 2011). Observations are therefore crucial in explorative studies on decision-making mechanisms. For example, exclusively relying on in-depth interviews may result in bias because respondents may offer socially desirable answers where opinions do not

match with behaviour and real-world ongoing decisions (Silverman, 2011). This study uses therefore a combination of different methods to collect information about decision-making processes including participant observations, in-depth interviews and archival documents enabling triangulation of data. After interviewing the organization's managers, interviewees were selected through theoretical sampling (Strauss & Corbin, 1994).

By identifying predominant financial versus social discussions and conflicts in our analysis, we recognized the identity distribution that is typical of hybrid organizations (Jay, 2013). The main arguments supporting either the financial or the social logic were expressed by different individuals. Following Foreman and Whetten (2002), we therefore clustered and conceptualized these two identities as the utilitarian and the normative identities, respectively. The abductive data analysis followed an iterative process, moving back and forth between data and the relevant literature according to a systematic combination of observations and theory (Dubois & Gadde, 2002). This abductive process eventually allowed the addition of second order codes and the identification of aggregate dimensions (see Figure 4.1).

Figure 4.1: Data structure. First-order codes, second order themes and aggregate dimensions based on ethnographic data.

4.4 Findings

Before describing the heuristics mechanism characterizing the process of strategy change, we first present the analysis done to categorize the co-existence of different identities, i.e. the utilitarian and normative identities. We do so by analysing the types of conflicting demands and categorizing the arguments provided by the employees to justify or confute such demand. Subsequently, we show the organizational structure to link the employee's identity to the one of their managers. We do the same with the managers' discourse throughout the process of strategy change. After the analysis of the response of each type of identities with which we categorized each manager, we finally present the concept of identity reflexivity.

4.4.1 Conflicting demands and employees' identification.

Our analysis first highlights the identification of complex societal problems triggering the need for designing a new strategy. At the start of the strategy development trajectory, different reasons to design a new strategy were mentioned by the managers involved (see Table 4.1). These were related both to external factors (such as demographic change) and to internal factors (mainly regarding the employees' ways of implementing Alpha's goals and acceptance of the previous strategy).

Table 4.1: The needs for a new strategy reported by the interviewees.

Problems to be addressed with the new strategy	
External	Internal
<ul style="list-style-type: none"> • Demographical changes: aging target group, refugees rising, shrinkage etc.; • Clients' complaints about new energy neutral houses; • Poorer clients, increase of debts, resulting in no rental payments. 	<ul style="list-style-type: none"> • Inconsistencies among employee's visions; • Previous strategy considered outdated and "never truly embraced" by the supervisory board; • "Confusions between portfolio plan and the organization' strategy".

While discussing the introduction of the energy neutral goals, different arguments were used about the impact of the ambition on Alpha's tenants. For Alpha, refurbishing all houses to meet energy neutral standards implied that the total housing stock needed to be drastically reduced. The divestment of a part of Alpha's housing stock was needed to fund the investments for zero energy refurbishments. Demographic changes, such as aging of the tenants, and cities' gentrification were driving Alpha to reorganize its assets and to work in favour of the zero energy plans.

In our analyses we secondly found that environmental and social goals emerged as contrasting and as complementary goals (see Table 4.2). Our

study shows that the goals reinforce each other by “making the case” for housing associations to pursue this strategy if, for instance, they help to reduce poverty or to improve financial stability. On the contrary, they represent a barrier if they harm financial sustainability of the organizations or even tenants’ well-being, conflicting with housing associations’ social mission. Financial considerations are often used to support the environmental target or to argue against it. The following quotes are examples of this finding.

Employee B – *I still see that people (colleagues) have problems accepting it and I fully understand because it is an enigma how to make it affordable [...] and we need to reduce our portfolio to make it happen.*

Employee C – *We see it is becoming more and more difficult, our tenants earn less and less and the new regulation force us to pay more taxes.*

Table 4.2: Combined Sustainable Demands for the pursuit of the 2030-energy neutral strategy: interviewees’ example quotes.

Social and Environmental	Environmental and Financial	Social and financial
Employee C – <i>We help the people through energy efficient homes and we also invest in green innovation [...]</i>	Employee C – <i>If we only improve the house and get to an energy label B, then we have to do it again after a few years because in 2050 we have to be energy neutral anyways.</i>	CEO – <i>They (tenants) don’t see the potentials of it, they just don’t know [...] I want to get the cost down for our tenants [...] If you make them saving energy than you help them reducing their monthly expenses, it doesn’t mean their rent has to increase.</i>
Employee E – <i>We are not designing it (house) for our clients of today, we do it for our clients of tomorrow.</i>	Employees C – <i>If they (tenants) save money in energy, they would be able to pay us the rent.</i>	Employee C – <i>What favour would we do to our tenants if we need to refurbish the houses again?”</i>
Employee D – <i>Energy neutral houses are a tool to improve our tenants’ life, they are not our goal.</i>	Employee A – <i>Other housing association are only doing minor interventions, like a solar panel on the roof, but our intervention is comprehensive and future-proof.</i>	Employee A – <i>Doing it now will save us from having to do it all over again in a few years’ time and investing twice on renovation. Other housing associations are now starting to follow our example.</i>

Since the first housing renovation projects, a number of clients have complained about the interventions. Some employees perceived that the energy neutral goal was going against the core mission of the company, while the CEO justified the goal as “doing something good for them (the tenants)”. This is exemplified by the following quote.

Employee D – *We say that we stand for the tenants, but to reach the energy neutral goal we might need to increase their rent, within the allowed limits of course, or move them to new houses and we forget that they are a vulnerable target group.*

By mapping managers and employees' discourse on the environmental target in the organizational chart, it is possible to identify a dominant normative identity among the members of the strategy, the service, and the client departments. Other departments (i.e. the real estate, the asset management, the financial and the IT departments) displayed a different orientation, associated with phrases such as "It costs too much" or "It is not technically feasible" aligning with a utilitarian identity (Foreman & Whetten, 2002).

Figure 4.2: Alpha's organizational structure (2017), interviewees' statements are divided between social and financial arguments.

Figure 4.2 shows that the two groups of departments report to different directors. This suggests that the organizational structure and reporting lines co-determine the implementation and acceptance of the new strategy. The considerations lead to the formulation of the following propositions:

Proposition 1: In the context of a dual-goal organizations dealing with complex problems that result in conflicting demands, organizational members tend to identify with the vision of their department or their division rather than with the mission of the organization.

Proposition 2: In the context of a strategy change, utilitarian arguments are used by both normative and by utilitarian identities to respectively confute or to justify the pursue of a social goal.

4.4.2 Organizational Response: Conflicting Identities

Similarly, to the individual identity distinctions made above, the manager's vision for the organization differ according to the department of belonging.

The strategy trajectory started with forecasting possible future scenarios for 2030. The main questions focused on the lifestyles of Alpha's target groups and on technological innovation of the housing sector. The forecasting outcomes were grouped into three main domains: social change, technological prediction and environmental sustainability. The managers clustered as utilitarian tended to bring forward technological development, whereas the normative ones consider societal impact the primary elements of the forecast as shown in Figure 4.3. Both identities included environmental sustainability aspects in their forecasts.

Figure 4.3: Forecast examples proposed by the “utilitarian” and the “normative” managers.

After the initial sessions (that were intended to draw scenarios for the future), the objective of the subsequent workshop was to relate the role of Alpha to the scenarios. The following questions were asked: (1) If this scenario X were

to happen, what will our role be and will we be able to fulfil it?; (2) If not, how can we prepare for the future?; and, (3) What is our “why”?

As shown with some example quotes reported in Table 4.4, the different types of managers, previously clustered as either utilitarian and normative managers, would display different interpretations as well as different solutions to problems.

Table 4.3: Examples of different interpretations per type of manager.

Same word – different interpretations		
Word	Meaning 1 (normative managers)	Meaning 2 (utilitarian managers)
House availability	Manager D – <i>Houses suitable to meet the specific needs of the tenants in a tailored manner.</i>	Manager B – <i>Number of houses we can offer to the tenants.</i>
Dwellings	Manager A – <i>Living, liveable housing</i>	Interim CEO – <i>Houses, our real-estate asset</i>
Poverty fight	CEO – <i>Help them (tenants) leaving their precariat state.</i>	Manager B – <i>Assure they pay their bills at the end of the months.</i>
Different wording – same meaning		
Word 1 (utilitarian managers)	Word 2 (normative managers)	Meaning
Vision forming	Strategy forming	Drafting the future role of housing association, understanding whether Alpha will be able to fulfil it and if not, what changes are needed.
Our goal	Our means	Achieving 100% energy neutrality by 2030.

Table 4.4: Responses to enigmas emerged in the process of strategy forming.

Problem	Normative managers	Utilitarian managers
Strategizing without CEO	Manager D – <i>Only because we are in a phase of transition it does not mean we should let the CEO start from scratch. We can offer him a good base to build upon.</i>	Manager B – <i>We do not need to take new responsibilities nor we should take any decision at this stage.</i>
Involving stakeholders in strategy forming	Manager D – <i>We should not work alone and in the strategy; we should include our stakeholders now to make sure we meet their needs in the future.</i>	Manager C – <i>I wonder if we can at all. They have specific requirement for us that we need to fulfil, these are pretty straightforward.</i> Manager E – <i>But we do it if they ask, not because we spontaneously have to go to them.</i>
Strategy outcome	Manager A – <i>Our strategy is intended to be future-proof and thus challenging whether what we do now is right or needs to be changed, this is what we need to do now. It is OK at this stage to draw a vision of the future development; we do not need to be specific.</i>	Manager B – <i>Our people are operational and our stakeholders concrete. And that's not a bad thing. Our impact is made by 5% of strategy and 95% of its execution. We have workers that want to have a clear direction we should be more concrete.</i>

Our findings suggest that managers tend to be negatively biased towards solutions proposed by managers that belong to an identity different than their own and that they sought to argue against them, looking for alternative solutions.

Proposition 3: Organizational members tend to reject visions proposed by members characterized by an organizational identity different from their own identity.

4.4.3 Identity reflexivity

Once a conflict in vision emerges, managers tend to argue using their personal experience to justify the view they have of the organization (internal reflexivity), irrespectively of whether or not they considered to display a utilitarian or a normative response. The following quotes highlight this finding:

Manager B – *I come from a poor family and I managed to get to a different position because I worked hard. We do not do them any favour by giving them extra money.*

Manager D – *I rely on my parents' help for my child and I feel our target group is often missing such sense of community. (...) Our houses have the potential to provide care for elderly, support for single mothers or even income generating means for the most vulnerable.*

Manager F – *what our target cares about is to have a roof, that's it. I have been working for decades in the sector and I know that tenants will complain if they find a bin full of garbage or a dirty street.*

As respond to personal experiences, arguments to support decisions are put forward reflecting on organizational roles and societal expectations (external reflexivity).

Manager D – *The model we follow brings together people, bricks, and finances. We are much more than brick-providers.*

Manager B – *This is perhaps what we want, but there are things we get asked by our network and this then needs to be restricted to what we can and should do as an organization.*

Manager F – *We want to make sure our neighbourhoods are safe and well-maintained and our houses complete. And that's exactly what the law is asking from us.*

These considerations lead us to the formulation of the following proposition:

Proposition 4: In case of conflicts between identities, personal experiences and stakeholders' expectations are used to build arguments for or against the proposed vision to reach consensus.

4.5 Identity Reflexivity as heuristics

Our insights presented identity reflexivity as a core heuristic mechanism in the design of new strategies for dual identity organizations. With this we mean that in the process of designing a new strategy, the managers implicitly –or with the help of workshops also explicitly – reflect on their norms/values/beliefs, and use this in the discussion with managers that have different norms/values/beliefs. In what follows we explain this mechanism in more detail.

Despite the emergence of different interpretations between different types of managers (see Table 4.3), we find that all managers use similar cognitive mechanism when strategic decisions are made. During the process of strategizing, the managers referred to personal experience and personal views to justify the strategic choices they proposed. Additionally, they related these choices to “what is expected from us” in society. By relating their personal expectations to their perceived expectations of Alpha (internal reflexivity), and to their perception of Alpha's clients' expectations (external reflexivity), they either approve or reject the arguments of the opposing identity.

Identity reflexivity is similar to but different from the concept of identification (see Proposition 1). Foreman and Whetten (2002, p. 618) define identification as “what a member perceives the identity to be and what they

think it should be” and relate this to the concept of identity comparison, defined as members’ evaluation to the organizational identity based on their own identity (Dutton, Dukerich, & Harquail, 1994). However, in contrast to the concept of identification, we argue that organizational members’ perception of clients’ expectations also shapes organizational identities, and they might be different to what members think the organizational identity should be. Managers acknowledge these differences and bring these in the process as arguments for decision-making. Hence, we identify and highlight the importance of internal and external identity reflexivity for three main reasons: (1) to differentiate the multilevel character of identification and identity comparison, (2) to underline its process-nature, and (3) to understand the conditions with which decision-making takes place. Internal identity reflexivity concerns the perception of organizational members of what the organization should do based on their own norms, beliefs, and values. External identity reflexivity is different from the concepts of legitimacy and societal expectations. Instead, it concerns member’s perception of legitimacy based on the member’s identity (see Figure 4.4).

We discovered that when managers of a hybrid organization identify with one of the predominant logics (such as financial versus social i.e., utilitarian versus normative), their arguments and interpretation use this logic and bias their decision-making processes and judgments (Proposition 3). They use identity reflexivity as mental shortcuts, consisting of quick jumps among the idea members have of the organization, their personal views and what they think the organizational stakeholders expect. Although the latter might fall into a causal relationship, normally excluded in the understanding of heuristics, this is substantially different. When managers are used to dealing with their stakeholders, they learn their preferences and these stakeholders’ preferences increasingly become embodied in the managers’ understanding. Like a ping-pong ball, the cognitive process consists of jumping from one level to another in mental shortcuts, which manifests itself in biased interpretations and argumentations.

Figure 4.4: External and internal reflexivity of and across societal, organizational, and individual levels.

4.6 Discussion and conclusions

Our longitudinal case study was designed to understand whether and how conflicting identities influence individuals' heuristics in strategy design. To answer the research question, we used a process perspective and investigated: (1) conflicting heuristics at the individual and the organizational level; (2) how these heuristics guide decision-making in the process of strategy forming. To this end, we analysed a social housing association that is characterized by a dual-goal undertaking a strategy re-design process followed by the integration of a new sustainability goal. In this organization, we identified the identity distribution as discussed by hybrid organization scholars (Jay, 2013) and therefore draw from the identity categorization indicated by Foreman and Whetten (2002) during the process of abductive theorizing.

Our findings suggest that individuals' heuristics are highly influenced by the organizational (dual) identity and that despite conflicting interpretations and different vision –consistent with their identity categorization– identity reflexivity is a common denominator. Although heuristics concern cognitive mechanisms and therefore are hard to be attributed to an organization per se, we argue that they link to the organization through identity.

The ability to change and adapt (strategy) to new environmental or social challenges is compromised if there is a lack of a shared understanding of the new sustainable goal. This ultimately originates from a dampened prosocial or environmental identity among employees, and managers in particular. If identities, resulting in different visions, interpretations, and desires, are not shared among the members of the management team in the process of strategizing, decisions are hard to make. Identity reflexivity functions as heuristics and facilitates this process, helping building arguments leading to decision-making in the pursue of social, mission driven goals. We highlight that the process of individual identification with one's department biases the decision making, resulting in individuals rejecting solutions or opinions proposed by department reflecting a different identity. Yet, to make sense of conflicts, individuals use personal experience and organizational legitimacy as heuristics. This process facilitates strategizing.

This study makes several empirical and theoretical contributions. To begin with, we provide additional empirical evidence to shed light on the debates around the applicability of the view of Bingham and Eisenhardt (2011) on heuristics in the context of strategy. Although it can be argued that the context of a careful strategy design, as the one of Alpha, is not "high-velocity" (Vuori & Vuori, 2014), the view of heuristics as a learning and adaptive process, is supported by our empirical observations for multiple reasons.

Firstly, at an organizational level, the need for a new strategy emerged as Alpha's response to an environmental change, in an effort to adapt to the societal context, improving legitimacy and social impacts. Secondly, the compartmentalized homogeneity of the members' identities across departments –i.e. their interpretations of the energy neutral strategy and their predominant identification with either the financial or with the social organizational identity– provides further evidence that the interactions between individuals influences adaptive organizational behaviour through learning. Thirdly, Alpha's employees' daily decisions are often guided by the fear of compromising legitimacy. Alpha learned how to gain –and lose– legitimacy, with experiences and trials and errors (e.g. libelling newspaper articles, tenants' protests and damaging behaviours in and of Alpha's dwellings). Hence, we propose a multilevel perspective linking individual heuristics to the organizational and social perception dimensions.

Further contributions concern the understanding of the complex phenomena of hybrid organizations. In fact, this study is one of the few addressing competing social demands in the context of hybrid organizations, since this literature focusses primarily on the conflict between a social goal and financial sustainability. As such, we provide foundations for the understanding of the

rising phenomenon that sees multiple sustainable development goals being integrated within one complementary strategy. In this respect, our findings would support Santos' (2012) view suggesting that hybrid organization need to focus on one predominant aspect –financial or social– not to lose legitimacy. Is that the case also for conflicting social demands, or is it advisable that hybrid organizations simultaneously tackle different sustainable development goals? Although our finding suggest otherwise, further studies are needed to shed the light on this important question.

Also, and in relation to the previous considerations, the main body of literature on heuristics focusses on firms striving to increase their competitive advantage (Bingham & Eisenhardt, 2011; Eisenhardt & Martin, 2000) or organizational rent (Amit & Schoemaker, 1993). With this study, we seek to initiate a debate on the heuristics mechanism of non-profit driven organizations and to understand what types of heuristics are found in the context of hybrid, socially driven organizations. Given the increase in studies on sustainable entrepreneurship and hybrid organizations, we expect that the debate on heuristics will soon be broadened to organizations that proactively pursue the sustainable development goals.

Furthermore, with this study we link organizational identity and heuristics in a context typically characterized by conflicting identities. The hybrid organization context gave us the opportunity to investigate the interplay between decision-making and identity in the process of strategy design. Specifically, we observed and explored the role of identity in integrating new and different sustainable demands within organizations dealing with conflicting identities due to their hybrid nature. With this research, we strengthen the idea that identity is bound to the concept of interpretations, connecting it to the framework of Foreman and Whetten (2002) and expanding on the concepts of identification and identity comparison.

To conclude, we believe this research can inspire similar studies on for-profit organizations, seeking to integrate new sustainable development goals in their strategy.

“Bad decisions made with good intentions are still bad decisions.”

James C. Collins

5 Combining SDGs: the need for a responsive approach in strategy change to manage sustainability paradoxes.^{12,13}

Social purpose organizations are increasingly facing the need to address multiple sustainable development goals simultaneously. One way to address multiple sustainability demands is to seek synergies among them, while minimizing underling tensions between those demands. Paradox lenses are increasingly used to understand how organizations can manage conflicting – yet interrelated– sustainability goals. Via action research in the setting of a Dutch housing association, we analyse the process of strategy change while observing the societal response to this change. First, we identify the synergies and conflicts of the organization’s sustainable demands, which we categorize as good intentions and unintended consequences, respectively. Second, we define specific types of sustainability paradoxes that emerge while implementing a new sustainable goal. Finally, our abductive study poses the question of whether and how the identification of sustainability paradoxes in the process of strategy change can be used to mitigate the risks of unintended consequences in social purpose organizations.

¹² This chapter is based on Greco, A., Long, T., & De Jong, G. (2019, July). The Freezing Effect of Sustainability Paradoxes and Conflicting Identities in Hybrid Organisations. In *Academy of Management Proceedings* (Vol. 2019, No. 1, p. 14881). Briarcliff Manor, NY 10510: Academy of Management.

¹³ We would like to thank Tobias Hahn for reviewing an earlier version of this manuscript during the paper development workshop at the EGOS Colloquium 2019 in Edinburgh.

5.1 Introduction

The 11th Sustainable Development Goal (SDG) “Sustainable cities and communities”, is encountering an increased international pressure through global policies, including the Paris Agreement (UNFCCC, 2015). Actions to achieve a sustainable built environment have been recognized among the most promising reducer of global emissions, since the built environment is responsible for 39% of energy-related carbon-dioxide emissions (Iyer-Raniga, 2019). Being one of the most concrete and feasible interventions to meet climate targets (Greco et al., 2017), the transformation of existing constructions into energy-neutral buildings scores high on the political agenda. An energy-neutral building is a building that produces all the energy it needs through renewable energy sources on-site (Greco et al., 2016).

By 2050, the housing stock in The Netherlands needs to be transformed to meet the CO₂-neutral national targets. Given the characteristics of the Dutch built environment, the transformation of social housing plays a fundamental role to reach these targets, since social housing consists of approximately one-third of the total housing stock in the Netherlands (Centraal Bureau voor de Statistiek, 2017). However, the current rate of transformation of social houses is very low, and if this pace continues, the climate targets established by international policies will not be met (Filippidou, Nieboer, & Visscher, 2017).

In the Netherlands, social houses are built, managed and provided by housing associations. Housing associations are hybrid organizations (Nieboer & Gruis, 2016) providing low-income tenants with affordable housing (Dewick & Miozzo, 2004).

Despite the urgency of national and international climate targets, housing associations find it challenging to combine these interventions to their core social mission. Compared to the rest of the population, people living in social housing are older, have lower incomes and are more likely to be unemployed and immigrants (Elsinga & Wassenberg, 2007).

With the action research presented in this chapter, we have participated to a series of strategy-workshops at a Dutch social housing association. These workshops were intended to redesign their strategy with a focus on poverty alleviation, after having seen the impact of a previous environmental strategy operating only for about 3 years. This strategy attempted to transform a portfolio of 20,000 houses into energy neutral dwellings by 2030. The energy neutral strategy resulted in a number of unintended consequences that needed to be addressed with the new strategy workshops, object on this research.

We analyse the underling interdependences between the organization's sustainability (social and environmental) goals, the paradoxical societal responses, and unintended consequences of sustainability-driven strategies. Our approach is abductive in nature. Starting from our empirical observations on the research field, we then recognize theories and advance them to explain our observations, in an iterative manner. We draw from the literature on social purpose organizations and the paradox literature to understand how mission-driven organizations shift their focus to meet new sustainable goals. With this research we question the underling relationship between tensions at the organizational level and unintended consequences at the societal level.

The contribution of this chapter is threefold. First, we identify the synergies and conflicts of the organization's sustainability demands, which we categorize as good intentions and unintended consequences, respectively. Second, we define specific types of sustainability paradoxes that SPOs might encounter while implementing a new sustainable goal. Finally, our abductive study proposes that a responsive approach to emerging tensions in strategy design is key to mitigate the risk for unintended consequences in social purpose organizations. To conclude, we discuss key implications for practitioners and scholars, and offer avenues for future research.

5.2 Theoretical background

5.2.1 Social Purpose Organizations

Sustainable development goals, are often **proactively** tackled by social purpose organizations (SPOs) striving to create positive social change (Stephan, Patterson, Kelly, & Mair, 2016). SPOs can include traditional non-profits, social enterprises, socially responsible for-profit businesses, and different types of public-private organizations, often categorized under the umbrella of hybrid organizations (Battilana et al., 2017).

SPOs are characterized by a **proactive entrepreneurial action** to address these important challenges (Weerawardena & Sullivan Mort, 2006). A proactive stance to sustainability problems is often regarded as a key aspect that distinguish an SPO—having a sustainability issue as core business (Spence et al., 2011; Sullivan Mort, Weerawardena, & Carnegie, 2003)— from a business doing CSR – tackling sustainability issues as a side or complementary activity (Aguilera et al., 2007; Greco & de Jong, 2017).

Though not always, CSR activities initiated by for-profit businesses tend to be of a more reactive nature, meaning that their focus is to comply with environmental regulations, to adapt to stakeholders' requests, or to react upon the changing environment (Chang, 2015). Contrarily, a proactive stance indicates ethical behaviour which goes beyond the country's laws and

regulations, intended to support sustainable economic, social and environmental development, even when not required or demanded by any stakeholder (Torugsa, O'Donohue, & Hecker, 2013).

The discourse among management scholars, disseminates proactive strategies as the “good” or most appropriate approach. To look at whether social challenges are tackled from a proactive or reactive strategy is to define whether an organization is, respectively “good or bad”.

In the pursuit of the sustainable development goals (SDGs), SPOs increasingly face the need to incorporate new sustainability goals overtime, possibly conflicting with their original one (Zollo et al., 2013) in a both reactive and proactive manner. For social enterprise, one of the main challenges is to remain true to their mission while being able to change and innovate (Young & Kim, 2015).

Tensions between sustainable development goals, such as environmental preservation and social well-being are increasingly challenging the decision-making process of organizations (Hahn, Figge, Pinkse, & Preuss, 2018). Past research show that when financial and social mission are conflicting, ambiguity on the organizational focus may lead to a loss of legitimacy and upheaval on stakeholders (Santos, 2012). Yet, whether and how SPOs successfully manage to tackle multiple sustainability challenges, achieving the intended positive social change through the effective implementation of their strategy, is still a poorly understood phenomenon (Stephan et al., 2016).

Paradox lenses, might help managers dealing with the complexity resulting from tackling simultaneously multiple SDGs. In the next section we introduce this concept.

5.2.2 Paradox lenses to make sense of SDGs

SDGs are complex challenges for which intricate solutions present conflicting demands and contradictory outcomes. Tensions between the actions required to meet the SDGs, such as environmental preservation and social well-being (Hahn, Pinkse, Preuss, & Figge, 2015), have been increasingly challenging the decision-making processes of organizations (Hahn et al., 2018).

Paradoxes lenses (Smith & Lewis, 2011) have essentially changed the way scholars and practitioners (can) think about conflicting demands by acknowledging the simultaneous oppositions and interdependencies of tensions. As opposed to an either/or approach to tackle conflicting goals and competing demands, paradox theorists propose a both/and perspective (Lewis, 2000). A trade-off approach to the triple bottom line (Elkington, 1997) of environmental integrity, economic prosperity and social equity,

argues that the three pillars of sustainability are in conflict, and thus sustainability can be achieved only by trading off one sustainability dimension in favour of another.

Contrarily, a paradox approach to sustainability seeks synergies among tensions, arguing that organizations combining financial demands with morally-driven social and environmental initiatives can achieve positive social and environmental impacts (Hahn, Pinkse, Preuss, & Figge, 2016). Framing sustainability tensions as paradoxes allows scholars to explore the process by which organizations deal with these tensions as they arise (Jay, 2013). Also in strategy design, paradoxes recognition can facilitate organizational members sense-making processes (Lüscher & Lewis, 2008) allowing to simplify complex sustainable demands (Hahn et al., 2014; Jay, 2013) thus enabling change.

However, recent advancements of paradox theory, suggest that approaching paradoxes exclusively relying on the perceived tensions of organizational members can lead to unintended consequences (Schad & Bansal, 2018). “For example, even if actors deny climate change and, therefore, do not perceive any tension, it does not mean that the climate is not changing.” (Schad & Bansal, 2018, p. 1491). Hence, recognizing paradoxes outside an organization’s boundaries (Smith & Tracey, 2016) is a first fundamental step – though not sufficient– to acquire a more systemic perspective of tensions, getting closer to an ontological view of reality while possibly reducing the risks of unintended consequences. Therefore, in this research we do not focus only at the organizational level of analysis. Instead, we study the societal response to the organization’s strategy while attempting to guide the organization’s managers in a temporal and spatial dimension of societal impact.

5.3 Research context and approach

This research started with an invitation of the former organization’s CEO to support the organization to develop a new strategy. Hence, the overall research approach and the method choices were not guided by a gap in the literature but rather by the objective to help a team of managers to draw a new strategy in a moment of crisis. For the purpose of this study we conducted action research with the management team of a housing association, hereby named Alpha. Alpha, has approximately 200 employees, and owns and manages a portfolio of about 20,000 houses, situated throughout the Northern region of the Netherlands. Below we introduce the Dutch housing association context.

5.3.1 Housing associations

Started as autonomous initiatives from companies or foundations, housing associations begin to manifest in the Netherlands at the end of the 19th century. Their initial goal was to provide better working conditions to industrial employees. With the Housing Act of 1921, housing associations became legally established as “housing for the poor” was claimed to be a shared national responsibility (Dolata, 2008). The Social Rented Sector Management Order, states that approved housing associations have six duties: housing those who are not able to afford appropriate dwelling; assuring a decent-quality of dwellings; consulting with their tenants; running their finances responsibly; contributing to liveable neighbourhoods; and providing housing, for the elderly and handicapped (Elsinga & Wassenberg, 2007). Today, housing associations do not receive government subsidies, and they are maintained by (minimum) rents and sale of properties.

In the following sections, we introduce the research approach and, the method chosen for this study. We later present our analysis and conclude discussing our contribution, implications for theory and practice and, suggestions for future research.

5.3.2 Research Approach

Action research approaches are a way to bridge theory and practice. Lewin (1946) recommended that subjects and researchers should be jointly responsible for theory development and evaluation, in order to ensure relevant and valuable results. In action research, “the researcher’s function is to serve as a resource to those being studied” (Babbie, 2015, p. 341). For the purpose of this study we use a systematic combination of observations and theory; “[t]he main characteristic of this approach is a continuous movement between an empirical world and a model world” (Dubois & Gadde, 2002, p. 554). Our approach is therefore abductive in nature. Beginning with a general process inquiry on the dynamics around strategy change, we engaged in the process of strategy design, keeping an open-mind and the flexibility to adapt depending on actors’ response. Before going back to the research field, we tuned our ideas, reflected on observations and then looked for evidence. In abductive approaches, researchers “engage in imaginative thinking about intriguing findings and then return to the field to check conjectures” (Charmaz, 2009, pp. 137–138). Starting from our empirical observations on the research field, we then recognize theories, and advance them to explain the observations, in an iterative manner. Already halfway through our field work, we recognized paradoxical outcomes of the different sustainable demands proposed in the process of strategy forming.

5.3.3 Flexibility

Because our analysis started alongside our field work, while progressing with the workshop, we developed the awareness that the management team needed support in making sense of their different sustainable demands. We subsequently arrived to the idea that action research could play a crucial role in supporting organizations' sustainable visions and engaged in an increasingly active role in each workshop. Hence, flexibility in the workshop design and participation was a crucial part of this field research. Although we are aware that this approach might contradict past ideas advocating the importance of a detailed planning as a fundamental step of action research, we believe that the dynamical context of this research required a more adaptive and flexible approach. In our view, such approach uncovers findings that serve theory development while still benefiting from a methodological rigor.

5.3.4 Drawing a base-line

The action research approach started after a period of silent observation, in which we conducted a different ethnographic study on fighting energy poverty through the implementation of energy neutral buildings. After this observation period, the first author (participant author) was invited by the CEO to support the design of the strategy. Meanwhile, the participant author interviewed each member taking part in the strategy design process and observed other activities related to strategic and environmental planning inside and outside the housing association. The interviews focused mainly on three aspects: 1) the content and effects of the former strategy; 2) the personal view on the meaning of sustainability-related issues and 3) the main challenges in the organization's social performance.

Figure 5.1: Time frame of action research: the period before and after the action research, the participant author conducted non-participant observations.

5.3.5 Preliminary non-participant observation.

The first setting of the observations has been the head office of the housing association, specifically the department “sustainability and environment”. The participant author’s role was one of an interested researcher, willing to

help the department with her knowledge on sustainable buildings and related inhabitant engagement techniques.

The second scenes of the observation have been the participatory initiatives between the housing association and the tenants (e.g. informative evenings, communication events and community engagement activities). In these settings, informal conversations with the tenants were initiated and in few instances the participant researcher followed up with in-depth interviews. In these settings the role of the participant researcher was the one of a PhD student not embodied in the organization. Given the lack of trust between the tenants and the housing association's members, the role of a university researcher made it easier to interact with the tenants.

5.3.6 Action research design

In a workshop format, guided by an external consultant, a total of 8 “strategy-forming” meetings were scattered over a period of 10 months. The workshops were restricted to 4 managers (finance, control, HR and environment) and the CEO. Back-casting and scenario techniques have been used throughout the action research part. The workshops would approximately last half a day, with the other half of the day devoted to content preparation with the strategy manager and the external consultant. In the workshops, the participant researcher supported the external consultant, presenting concepts and taking notes to prepare the following workshop. The participant researcher also presented part of the workshop results to the supervisory board. In Table 5.1, we report a brief summary of the workshops' content. Each workshop was documented with field-notes, while some of the most important meetings (e.g. the presentations to the supervisory board), requiring the participant researcher to engage in presentations –hence impeding writing– were audio recorded.

Table 5.1: Workshops structure and content.

Workshop strategy forming (2017)	Concepts presented	Questions asked to participants
Workshop 1, back-casting (March)	1. Transition theory. 2. The shift from a managerial to an entrepreneurial economy. 3. Ken Wilber integral theory.	1. How will the world look like in 2030? 2. What will the Netherlands look like regarding the relationships between life, living and working, living environment and mobility, living and care, living and technology, neighbourhoods and districts, communities? 3. How will we regard the individual and collective living, housing and care facilities?
Workshop 2, positioning (April)	1. Simon Sinek's golden circle: start with why. 2. Van der Steen, van Twist, Chin-A-Fat, and Kwakkelstein (2013) triangular model: civil society, market and government-state authorities.	1. How do we position housing associations in Van den Steen's triangle? 2. What are the implications of our positions? 3. Where are we now, where should we be given our predictions for the 2030?
Workshop 3, target group (May)	1. The 6 citizens' categories in the Netherlands (Centraal Planbureau & Sociaal en Cultureel Planbureau, 2015). 2. "Reacting to evolutionary goal" from the book Reinventing organizations (Laloux, 2014).	1. What target group do we want to address? 2. What is our value proposition for this target group? 3. What themes should we address in our strategy to help our target group?
Workshop 4, vision (May)	1. Summary of the results of the previous workshops.	1. Which relevant (internal) policy documents, and plans are important for our vision on 'The future of living'? 2. How do you describe (for yourself) the Why, How and What for the organization?
Workshop 5, preparation for the first supervisory board presentation. (June, CEO leaves the association)	1. Summary of the results of the previous workshops.	1. What are the points for discussion that we wish to present to the Supervisory Board? 2. Who is presenting what?

Workshop strategy forming (2017)	Concepts presented	Questions asked to participants
Workshop 6, Presentation to the supervisory boards (June)	1. Transition theory. 2. The shift from a managerial to an entrepreneurial economy. 3. The 6 citizens' categories in the Netherlands.	1. What target group do we want to address? 2. What is our value proposition for this target group? 3. What themes should we address in our strategy to help our target group? 4. Are there conflicts with our institutional role?
Workshop 7, Preparation management team (September, new interim director joins the association)	1. Summary of the results of the previous workshops.	1. What are the points for discussion that we wish to present to the Supervisory Board? 2. Who is presenting what?
Workshop 8, Supervisory board + interim CEO + representative member of AEDES (network organization of housing associations) (December)	1.The definition of social enterprises, charity and hybrid organizations. 2.Van den Steen (2013) triangular model: civil society, market and government-state authorities. 3. Current and future challenges in social housing (by an AEDES representative).	1. What role do we want or need to play in sustainable development? 2. How is our environmental goal conflicting with our social institutional goal? 3. How far can we push new living concepts for our target groups?

5.4 Results

We present our result by first introducing the case, and factors that created the need for a new strategy. In this part we show that there is a substantial difference between the organizational strategy and the outcome of its implementation. Hence, we show the tensions between the sustainability demands and the social mission. The sustainability ambitions were sketched by Alpha through a series of forecasting exercises projecting the ambition for the year 2050. Finally, we classify the specific types of sustainability paradoxes identified and their relationship with unintended consequences and new strategy ambitions.

5.4.1 The need for a new strategy

In 2015, the CEO of the housing association case introduced the energy neutral goal, aiming to transform its entire portfolio to meet the energy-neutral standards. This target largely exceeds the Dutch National Energy

Agreement that set the goals for housing associations to transform their stock to achieve energy label B by 2020 and energy neutrality by 2050 (Tambach et al., 2010).

“One house per day” is Alpha’s energy neutral campaign, stating that by 2030 approximately 20,000 houses will be transformed –either refurbished or, demolished and then rebuilt– to meet energy neutral standards. As a result of the energy neutral goal, Alpha gained visibility as a front runner in the energy transition of social housing in The Netherlands. Between 2015 and 2018, approximately 600 houses have been refurbished or newly built to meet energy neutral standards. However, as reported by several of Alpha’s employees, the first interventions encountered negative feedbacks from the tenants. A number of unintended consequences occurred. Therefore, in 2017, the CEO decided that it was time to redefine the strategy with a focus on poverty alleviation.

Unlike the setting of the energy neutral goal, which can be ascribed to Alpha’s environmental initiative, we consider the new strategy to be of a reactive nature; meaning it emerges as a reaction to a social response or pressure. This contraposes to a proactive strategy (such as the energy neutral goal in Alpha’s case), which starts as an initiative of the organization CEO. During the sessions to design the new strategy, the recognized unintended consequences, originating from the previous strategies, were used as key arguments to support new strategic choices.

Figure 5.2: Framework for the process of strategy adaptation along the dimensions of reactive and proactive strategy and organizational and societal levels. In brackets, the timeframes specific to the case of Alpha.

The temporal context in which the new strategy was delineated enabled the experiences gained in the previous strategies to be used to identify synergies and conflicts of Alpha's sustainability goals, while simultaneously projecting future goals.

5.4.2 Transforming tensions into win-wins

In our analysis, triple bottom line objectives –economic, environmental and social aspects– emerge as both contrasting and complementary (see Table 5.1). These reinforce each other “making the case” for housing associations to pursue this strategy if, for instance, they together help to reduce poverty. On the contrary, they represent a barrier if they conflict with housing associations' mission, by harming the financial sustainability of the organizations or even tenants' well-being. For Alpha, refurbishing all houses to meet energy neutral standards implies that the total housing stock needs to be reduced drastically (planet against profit). The divestment of part of Alpha's housing stock is needed to fund the costly zero energy refurbishments. Demographic changes, such as aging of the tenants, and cities' gentrification are also forcing Alpha to reorganize its assets, working in favour of the zero energy plans. However, before 2015, one aim of the CEO was to grow the association's asset.

Since the first housing renovation projects, a number of clients have complained about the interventions, due to a number of reasons. The most frequent reason mentioned were: poor management of the interventions, bad communication process throughout the renovation (e.g. lack of clarity on delivery time, what type of discomfort and changes the tenants could expect) and, an unsatisfactory end-product. Some employees perceive that the energy neutral goal might go against the core mission of the company which is providing housing to low income people (planet against people). Contrarily, the CEO and managers would frame the goal as a win-win combination of demands. However, the employees are the ones who interface with the tenants, whereas the managers and CEO have little, to no interaction, with the tenants.

Table 5.2: Example quotes from interviewees discussing the pursue of the 2030-energy neutral strategy.

Conflicting sustainable demands		
People against Planet	Planet against Profit	People against Profit
Employee D – We say that we stand for the tenants, but to reach the energy neutral goal we might need to increase their rent, within the allowed limits of course, or move them to new houses and we forget that they are a vulnerable target group.	Employee B – I still see that people have problems accepting it and I fully understand because it is an enigma how to make it affordable [...] and we need to reduce our portfolio to make it happen.	Employee C – We see it is becoming more and more difficult, our tenants earn less and less and the new regulation force us to pay more taxes.
Combined sustainable demands		
People & Planet	Planet & Profit	People & Profit
Manager C – we help the people through energy efficient homes and we also invest in innovation [...]	Manager C – if we only improve the house and get to an energy label B, then we have to do it again after a few years because in 2050 we have to be energy neutral anyways.	Ex-CEO – They (tenants) don't see the potentials of it, they just don't know [...] I want to get the cost down for our tenants [...] If you make them saving energy than you help them reducing their monthly expenses, it doesn't mean their rent has to increase.
Employee E – We are not designing it (house) for our clients of today, we do it for our clients of tomorrow.	Manager C – If they (tenants) save money in energy, they would be able to pay us the rent.	Manager C – What favour would we do to our tenants if we need to refurbish the houses again?"
Manager D – Energy neutral houses are a tool to improve our tenants' life, they are not our goal.	Manager A – Other housing association are only doing minor interventions, like a solar panel on the roof, but our intervention is comprehensive and future-proof.	Manager A – <i>Doing</i> it now will save us from having to do it all over again in a few years' time. Other housing associations are now starting to follow our example.

5.4.3 Sustainability goals and unintended consequences

Together with the management team, we identified a number of unintended outcomes of the former energy neutral strategy, which emerged both prior to and during the process of the new strategy design (see Table 5.3). Simultaneously, the rationale behind the sustainability ambitions was justified by the managers as good intention. By looking at the past unintended

outcomes the managers would express concerns about the possibility for these to occur again. Yet, the good intentions linked to the sustainability paradoxes were still considered valid and important to pursue on the long term. In the following table we report some of the most important sustainability ambitions mentioned during the strategy design process, together with the risk recognized and the examples of past unintended consequences given by the managers to explain the risks. We categorize these as paradox and further explain these below.

Table 5.3: Sustainability paradoxes identified prior and during the process of crafting a new strategy.

Paradox label	Sustainability ambition	Risk of unintended consequence	Example of past unintended outcomes
Paradox of performing	Front-runner in energy transition	Poor average energy performance	The ambitious energy target led to poorer average energy performance. A benchmark report (AEDES, 2017) shows that Alpha scored low due the heterogeneity of the houses: few of them are zero energy while many are low energy label. Other housing associations instead, opted for a mild renovation, pursuing energy label B or C, scoring on average higher than Alpha.
	Renovating the houses without moving the tenants	Client discomfort	Alpha registered a number of complaints for the noise of the construction and the presence of workers in the houses.
Paradox of planning	Meeting the needs of our future clients	Neither meeting the needs of future clients nor those of the present clients.	The predictions assume that Alpha's target group is the same and keeps behaving the same way it behaves today, in the future, which may not be the case.
Paradox of involvement	Community engagement (prior project execution)	Unengaged future clients	Alpha's interventions are planned for the long term. It will be difficult to give to other clients (future and present) the same possibility to choose. The drawbacks are twofold: 1. The choices the clients meet today might not be applicable to future clients; 2. Other clients complain for not having the same choices.

Paradox label	Sustainability ambition	Risk of unintended consequence	Example of past unintended outcomes
Paradox of impact	Reducing portfolio to improve the quality of the houses	Reduced scale	To invest in energy efficiency measures, some of the stock must be sold resulting in a lower supply of social housing.

5.4.3.1 *Paradox of planning*

Embodied in the definition of sustainability is the prescription of preserving current and future generations' needs (Brundtland, 1987). However, the arguments emerging during the forecasting and strategy sessions underlined the impossibility of predicting Alpha's clients' needs for the future. As for instance argued by one of the managers: "How do we know if the tenants will need to have a smart meter? Besides, will our target group be the same given the demographic changes? Maybe in 2050 we will focus only on elderly and refugees because all young people will move somewhere else" (Manager A). The argument used by the organization's members to justify the energy-neutral strategy "we do not do it for the client of today, we do it for the client of tomorrow" appear in this instance contradictory. A perceived unintended consequence of shaping the strategy according to a forecasted future, is the risk of neither meeting the needs of the current clients, nor the ones of future unknown target groups.

5.4.3.2 *Paradox of involvement*

Engaging in participatory practices is considered a fundamental duty of housing associations when making choices affecting the built environment, neighbourhood services, and facilities (Housing Act, 2015). The importance of giving tenants the opportunities to be involved in the decision making of the renovation is also felt by the tenants. For instance, as a tenant stated during one interview "They could have let us make choices as a courtesy to all the discomfort we had to go through during the renovation. I really did not like how they did it, they could have asked me how I wanted it before placing it".

However, Alpha's interventions are planned for the long term. Current clients involved in today's community engagement practices and decision making can shape decision of housing associations and be part of a co-creation processes. Future clients, using the same facilities and houses co-created with previous tenants, will not have the same opportunities and will have to accept circumstances shaped by their predecessors. Therefore, housing associations prefer to adopt "average standards" for the housing features, which are

established beforehand. The disparity of opportunities of making choices is not only temporal, but also a spatial. “One tenant once asked us why other tenants in other houses could chose for their new tiles and kitchen while we were not asked.” This results in heterogeneous clients’ involvement depending on the stage of development of a particular area. For example, in the past year, some tenants have been given the opportunities to make choices on their new houses, whereas some others have been given an old house with no opportunities to make changes.

5.4.3.3 Paradox of impact

The paradox of impact occurs if, when maximizing one of the pillars of the triple bottom line, another pillar appears to be negatively affected. For example, to invest in energy efficiency measures, some of the stock had to be sold resulting in a lower supply of houses for poor people. In this case, the impact on the “planet” is higher, whereas the impact on the “social” pillar appears to diminish. However, there are other aspects of social impact which might still improve such as comfort and indoor air quality. However, these impacts are salient thus not perceived neither by the individuals making decisions nor by the users.

5.4.3.4 Paradox of performing

Performance discrepancies can occur due to the temporal aspect of performance, i.e. the fact that performance is evaluated over a certain period of tie. Or it can be caused by the fact that performance is an average evaluation which does not display a particular environmental, social or economic improvement. For example, Alpha’s ambitious energy target led to poorer average energy performance. A benchmark report (AEDES, 2017) shows that Alpha scored low due the heterogeneity of the houses: few of them are zero energy while many are low energy label. Other housing associations instead, opted for a mild renovation, pursuing energy label B or C, scoring on average higher than Alpha.

5.5 Discussion

5.5.1 Designing a responsive strategy

The risk of a poor management of tensions is the emergence of more tensions, which in turn can negatively affect the responsiveness of the organization, hindering its proactive stance. In the case of Alpha, overlooking interrelated and recurrent tensions resulted in unintended consequences, thus compromising their primary social mission. The recognition of sustainability paradoxes allowed Alpha to visualize nested tensions and to prioritize certain goals over others. We argue that SPOs, attempting to integrate multiple

SDGs, need to address tensions combining reactive and proactive approaches. This requires a responsive, rather than a proactive approach, as tensions must first be recognized. Such a responsive approach was implemented –through action research– in the case organization, through user-centric and experimental strategy methods.

5.5.2 Can sustainability paradoxes be used to manage the risks of unintended consequences?

The recognition of specific sustainability paradoxes served as a sort of interpolation process between the forecasted future intentions and the unintended outcomes experienced in the past. The temporal sequence of a proactive and a reactive strategy allowed to compare tensions perceived within the organizational boundaries, with the unintended consequences occurred outside of the organizational boundaries. Accordingly, we have approached the tensions perceived at the organizational level with the impact perceived at the societal level. While attempting to follow Schad and Bansal's (2018) warnings about the epistemic fallacy of which paradox is subjected, differentiating between ontology and epistemology of societal impact is –in this specific context– easier said than done. How can negative social impact be ontologically defined? Would a temporal perspective help to define long-term social impacts without relying on users' (the tenants in this case) perceptions? Irrespectively of an objective definition of negative social impact, tenants' claims of Alpha's negative effect on their wellbeing, is for Alpha an unintended consequence.

Alpha's "good intentions" were supported by seeking synergies among different sustainable demands. However, opinions inside the organizations were leaning toward the intrinsic conflicts of those demands and the plausible negative consequences of the "good intentions". These competing yet interrelated aspects –conflicts and synergies– were early discussed in the process of strategy change. Hence, our abductive study poses the question of whether and how the identification of sustainability paradoxes in the process of strategy change can be used to mitigate the risks of unintended consequences in social purpose organizations. If good intentions would not encounter tensions, resulting in a non-paradoxical sustainable demand, would unintended consequences be avoided? What does it take to meet good intentions with societal needs? Are user-centred approaches a solution to avoid unintended consequences?

5.6 Conclusions

During our active participation in the strategy formation workshops, we invited the management team to recognize and acknowledge the principles of

environmental integrity, economic prosperity, and social equity in their strategy and vision. During the analysis we investigated the underlying interdependences between the organization's sustainability (social and environmental) goals, the paradoxical societal responses, and unintended consequences of sustainability-driven strategies.

The contribution of this study is threefold. First, we identify the synergies and conflicts of the organization's sustainability demands, which we categorize as good intentions and unintended consequences, respectively. This contribution represents an importance evidence for housing associations in particular, and for organizations striving to combine multiple SDGs, in general. This aspect also highlights an important theoretical contribution: a proactive approach to social and environmental issues is not always beneficial to the beneficiaries. The literature of CSR advocates proactive approaches as the ideal way to conduct social and environmental business's efforts. This research provide evidence against such corporate responsibility approach.

Second, we define specific types of sustainability paradoxes that SPOs might encounter while implementing a new sustainable goal. We analysed these paradoxes in detailed and describe how they emerged. This contributes to the paradox literature by disentangling the link between good intentions and unintended consequences.

Thirdly, and in relation to the previous point, our abductive study proposes that a responsive approach to emerging tensions in strategy design is key to mitigate the risk for unintended consequences in social purpose organizations.

Beyond the results of this study, by conducting action research we prepare the ground for future discussions on the role of academic in business sustainability (Zuber-Skerritt, 2012). Although different scholars have been performing action research with team of managers, claiming its role in affecting organizational change through paradox lenses (e.g. Lüscher & Lewis, 2008), the potential of action research approaches in organizational design for sustainable development have found little space in the literature. The interaction between the academic and the corporate world –source of debate on the dichotomy between theory and practice– is today predominantly of informative nature, especially for sustainability matters. In contrast with the general view where researchers are approached to acquire data, advises, or evidence to support decision making, action research supports a more collaborative approach of shared responsibilities and effort, combining different expertise in a transdisciplinary fashion. Although we are aware that measuring the exact impact of an active researcher is difficult, we propose that a sense of trust towards scholars, functions as an alternative

framing approach to the problem addressed by the managers. Such sense of trust towards scholars together with framing were among the main mechanism facilitating sense-making. Our results advance methodological and theoretical knowledge on the unique potential of action research for sustainable strategy development.

“It’s much better to do the right thing wrong than the wrong thing right. The righter you do the wrong thing the wronger it becomes.”

Russell L. Ackoff

6 Experimentation for sustainability through collaborative innovation contests: the case of the sustainable innovation challenge.¹⁴

Innovation contests open to the public, are increasingly used by businesses as an instrument for open innovation, and in recent years, to address sustainability related questions. However, according to the open innovation literature, one of the main pitfalls of the solutions developed by non-expert designers can be the mismatch between the idea proposed, and the companies' actual capabilities to implement such solutions. Companies' involvement throughout the planning, co-creation, and evaluation phases of the innovation contests, can potentially address this mismatch. Through participant observations, the authors followed the design, development, and final outcome of a "sustainable innovation challenge". Each of the 16 participating companies proposed a challenge in one of the fields of circular economy, energy efficiency, social innovation, or 'sustainable' organizational initiatives. A series of workshops were then facilitated using design-thinking principles. Solutions to the proposed questions were co-created by company's members with volunteers participating in the challenge as well as target users. Our data suggest that innovation contests open to the public, developed and assisted by organization's members, are useful as vehicles for experimentation for sustainability-oriented innovation. The outcomes of the contests, however, were perceived by the participants as effective to create new collaborations, and to deepen the understanding of the sustainability problem, as opposed to providing radical solutions to these problems.

¹⁴ This chapter is based on "Experimentation for sustainability through design thinking: The case of the sustainable innovation challenge" which has been presented at the EGOS Colloquium 2019 in Edinburgh and is co-authored with M. Eikelenboom and T. Long.

6.1 Introduction

Sustainable development (Brundtland, 1987) cannot occur without sustainable businesses (Bansal, 2002), so understanding how to transform existing organizations into sustainable ones is essential. During the last decade, new and existing ventures have been increasingly aware of the need to adopt sustainable practices (Bocken, 2015; Elkington, 2006). Sustainability oriented innovation (SOI) can assist firms in adopting sustainable practices through innovating in areas of products, processes and organizational practices to realize the various objectives of sustainability (Klewitz & Hansen, 2014). However, current progress towards sustainable development and positive social change is widely seen as insufficient (Dyllick & Muff, 2016).

Open innovation (Chesbrough, 2006), defined as “a distributed innovation, based on purposively managed knowledge flows across organizational boundaries” (Chesbrough & Bogers, 2014, p. 12) was initially proposed to enhance competitive advantage, but could also be an important step in helping businesses to meet sustainability goals (Behnam, Cagliano, & Grijalvo, 2018; Howard-Grenville, Buckle, Hoskins, & George, 2014; Mothe & Nguyen-Thi, 2017; Olsen, Sofka, & Grimpe, 2016). In particular, open innovation in the form of community innovation contests intended to support R&D efforts, are considered effective at addressing sustainability related questions (e.g. Hansen, Bullinger, & Reichwald, 2011) and can potentially accelerate sustainability-oriented innovation (SOI) (Klewitz & Hansen, 2014). In these innovation contests, a firm facing an innovation-related problem posts this problem to a population of independent agents and then provides an award to the agents that generated the best solution (Terwiesch & Xu, 2008).

The main argument in favour of this approach is that organizations might have limited knowledge on sustainability-related issues (Hansen et al., 2011) and collaboration allows organizations to access partners’ knowledge (e.g. Olsen et al., 2016) resulting in solutions that organizations could not have generated individually. Involving the public in these open innovation contests is important in order for firms to gain understanding to the public’s needs, ideas and expectations, understand their language, nurture a trust-based dialogue and create value for all parties involved (Ghassim & Bogers, 2019).

Despite its popularity, many firms still struggle to manage open innovation (Vanhaverbeke, Chesbrough, & West, 2014), due to a lack of necessary capabilities to incorporate it into their research and development (R&D) efforts. One of the main pitfalls of the solutions developed through open innovation can be a mismatch between the idea proposed and the company’s actual capabilities to implement such solutions (Behnam et al., 2018; Enkel,

Gassmann, & Chesbrough, 2009). Design thinking (DT) can potentially address this mismatch, when used as tool to guide innovation contests. DT is regarded as a human-centred methodology to solve complex problems and is thought to enhance creativity and innovativeness (Johansson-Sköldberg, Woodilla, & Çetinkaya, 2013). DT is considered a way to enable non-designers to adopt design methods in multidisciplinary teams for a broad range of innovation challenges (Seidel & Fixson, 2013).

Due to its multidisciplinary and collaborative nature, DT can help facilitate a cross-functional dialogue, which may enable companies to bring in their own perspectives in the innovation contests and tailor the outcomes to their capabilities. We refer to collaborative innovation contests as innovation contests that involve close collaborations between the challenge participants and focal companies. With this chapter, we strengthen the link between open innovation for sustainability and human centred approaches, such as DT for the achievement of the triple bottom line (Elkington, 1997) value creation.

We suggest that collaborative innovation contests are a promising tool to accelerate SOI in businesses who lack open innovation capabilities. We further propose that when those initiatives are facilitated through DT sessions, in which company's employees participates, the mismatch between open innovation outcomes and company capabilities for implementation, can be reduced. Thus, this research paper offers insights to the following question: **How can collaborative innovation contests, involving design thinking, be used by businesses to accelerate sustainability-oriented innovation?**

Through participant observations, interviews and archival documents, the authors collected data on the design, development, and final outcome of a "sustainable innovation challenge". Each of the 16 participating companies proposed a challenge in the fields of either circular economy, energy efficiency, social impact, or 'sustainable' organizational initiatives. DT sessions were then facilitated by some of the companies' employees or instructed facilitators, over a 9-hour workshop. The solutions proposed from the participants were subsequently judged by company's representatives first, and by a selected jury later. With "challenger", we refer to companies and individuals proposing the sustainability question or challenge. Challengers look for a solution to a sustainability problem. The "participants" are the individuals who subscribed to the challenge, participated in the DT process, developed the solution for the final competition event, and pitched the solution. Participants included companies' clients, users, students, professionals, and amateurs. We investigated the expectations and motives of both parties involved in the challenge.

Our findings suggest that collaborative innovation contests, involving DT, provide businesses with evidence based actionable knowledge (Caniglia et al., 2017) for SOI. In other words, it serves as an experimentation tool with which business propositions are designed and/or tested in a user centric manner and exposed to a feedback loop among businesses, clients, users, and the public. Such knowledge is an important driver for strategic choices in relation to sustainability questions, with which the businesses proposing the challenges were dealing with.

This chapter provides relevant insights into the use of open innovation contests involving the public for sustainability-oriented innovation. Furthermore, we provide insights into how DT can be used to bridge the gap between the solutions proposed in these, contests and the potential lack of necessary capabilities to successfully implement these solutions. However, our analysis suggests that the close involvement of companies in these types of innovation sessions can possibly compromise the perceived creativity of the proposed solutions (Baer & Oldham, 2006). Also, both participants and challengers tended to focus on the understanding of the problem, raising additional questions on the sustainability problem at stake. The challengers reported to possess a deepened understanding of problem as outcome of these innovation contests. Consequently, we propose that these sessions are regarded as more suited for experimentation purposes.

We structure the chapter as follow: we briefly review the theoretical background of this research, starting with open innovation and innovation contests, and DT. Subsequently, we introduce our research method and approach. Finally, we present our findings, discuss conclusion and limitations, while offering avenues for future research.

6.2 Theoretical background

6.2.1 Innovation contests as open innovation tool for sustainability-oriented innovation

SOI has been argued to be the foundation for the transition towards more profitable, socially acceptable and cleaner business practices (Klewitz & Hansen, 2014). SOI has been defined as ‘making intentional changes to an organization’s philosophy and values, as well as to its products, processes or practices to serve the specific purpose of creating and realizing social and environmental value in addition to economic returns’ (Adams, Jeanrenaud, Bessant, Denyer, & Overy, 2016). SOI is often characterized by high levels of complexity and uncertainty due to the socio-technical diversity inherent in sustainability contexts and the opposing interests of businesses and their

stakeholders (Ghassim & Bogers, 2019). Therefore, for many firms, sustainability-oriented innovations are still highly difficult to achieve.

It has been suggested that external knowledge sourcing and open R&D are essential to reduce complexity and uncertainty in SOI (Garcia, Wigger, & Hermann, 2019) and accelerate firms' social (Bullinger, Neyer, Rass, & Moeslein, 2010) and environmental innovation (Lopes, Scavarda, Hofmeister, Thomé, & Vaccaro, 2017; Mothe & Nguyen-Thi, 2017). The argument to adopt open innovation is that collaboration allows organizations to access partners' knowledge (e.g. Olsen et al., 2016), resulting in solutions that the organization could not have generated individually. Despite its widely recognized importance, many firms still find it difficult to incorporate open innovation efforts into their R&D practices (Chesbrough & Bogers, 2014). Key barriers include: high coordination costs, difficulty in finding the right partners, imbalance between open innovation activities and daily businesses, and lack of financial resources (Enkel et al., 2009). One of the key barriers to the implementation of open innovation for sustainability is a lack of networking capability together with the difficulty to coordinate internal and external innovation efforts (Behnam et al., 2018).

These barriers limit businesses transition to sustainability, since R&D departments might have limited knowledge on sustainability-related issues, and limited internal resources (Hansen et al., 2011). Open innovation projects in the form of innovation contests – or challenges – are considered effective at addressing sustainability related questions and accelerating SOI (e.g. Hansen et al., 2011). Innovation contests bring many benefits to R&D departments such as the gathering of multiple ideas generated by a pool of competitors who strive to be “the best”, and increasing capacity to generate and tests high quality ideas at low initial costs (Terwiesch & Xu, 2008). Innovation contests are defined as a competition between innovators who use their skills, experience and creativity to provide a solution for a particular predefined challenge (Bullinger & Moeslein, 2010; Piller & Walcher, 2006).

We refer to collaborative innovation contests as community innovation contests (Bullinger et al., 2010) intended to support R&D efforts and therefore developed in close collaboration with R&D departments. We narrow the focus of this research to challenge-based R&D projects intended to solve environmental or social problems. In this context, user-led innovation and inclusive design are used as key components for the successful design – and implementation – of sustainable solutions (Ornetzeder & Rohrer, 2006; Truffer, 2003). In the next section, we introduce DT as a human centred design approach relevant to build collaborative innovation contests and address sustainability questions.

6.2.2 Sustainability challenges and design thinking

In order to explain how and why sustainability problems emerge and persist, sustainability scientists have focused on understanding “the complex dynamics that arise from interactions between human and environmental systems” (Clark, 2007, p. 1737). Hence, scholars propose user-centric approaches as essential to the design of sustainable solutions (Shapira, Ketchie, & Nehe, 2017), including a need to understand unsustainable behaviour so as to successfully influence it (de Medeiros, Da Rocha, & Ribeiro, 2018). With the objective to bridge problem definition to solutions following a human-centred approach, DT gained popularity in different fields of sustainable innovation. DT is defined as: “a discipline that uses the designer’s sensibility and methods to match people’s needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity.” (T. Brown, 2008, p. 86).

In practice, DT consists of a stepwise process (Plattner, 2010) including three main phases: Need-finding, brainstorming, and prototyping (T. Brown, 2009; Hargadon & Sutton, 1997; Shane & Ulrich, 2004). The main promise of DT is its suitability to address wicked problems (Buchanan, 1992). DT is also regarded as a design philosophy that offers a possible approach to design problems of complicated nature (Liedtka, 2018) –often referred to as wicked problems (Rittel & Webber, 1974)– which call for radical (and incremental) innovations.

The benefits of DT have already been explored in terms of their ability to enhance triple bottom line value creation (Geissdoerfer, Bocken, & Hultink, 2016) and for circular business model innovation (Guldmann, Bocken, & Brezet, 2019). In particular, DT is regarded as beneficial for stimulating the creative process for the purpose of sustainable business model innovation, helping to accommodate often diverse stakeholder interests (Geissdoerfer et al., 2016) and enhancing stakeholders’ collaboration in green product development and production processes (Redante, de Medeiros, Vidor, Cruz, & Ribeiro, 2019).

We expect that DT can be used to bridge the gap between the sustainable solutions proposed in innovation contests and the capabilities of organizations that are necessary to successfully implement these solutions. DT sessions often involve multidisciplinary teams and use collaborative approaches which are well suited for creating linkages between individuals across organizations and encouraging cross-functional dialogue (Seidel & Fixson, 2013). Such multidisciplinary and collaborative approaches may be well-suited for facilitating a conversation between businesses, users and the public involved in innovation contests. They can for instance help create a

useful cross-functional dialogue between the different parties involved and enable the integration of different viewpoints. This is especially important in the context of sustainable innovations as these are often complex in nature and require interaction among multiple affected stakeholders in order to define interrelationships of concern and formulate adequate solutions (Porter & Derry, 2012).

Furthermore, by bringing their knowledge and perspectives into the discussion, companies can ensure that the outcomes of innovation contests better fit to their own capabilities. In this context, the representatives of the companies responsible for the implementation of innovation contests could potentially ensure that the outcomes of these contests are tailored to the capabilities of the organization through their active participation in the collaborative process of DT.

6.3 Research Method

6.3.1 Case description: the sustainable innovation challenge

The context of this research is a sustainable innovation challenge, which took place in Friesland, a northern region of The Netherlands, in the fall of 2018. Organized by a consortium of private and public organizations, it aimed to accelerate the sustainability transition of businesses in the region. Different organizations were invited to submit a sustainability related challenge they were currently dealing with. A total of 16 organizations proposed a challenge, indicating the intended target audience and the desired outcome. The 16 challenges were published online in August 2018 and open to the public for registration from September until October. The challenges were clustered in three main themes divided in three different boot-camp days: 1) circular economy and energy efficiency, 2) social innovation, and 3) ‘sustainable’ organizational initiatives (see Table 6.1).

The organizers of the sustainable innovation challenge provided DT training to employees willing to be “facilitators” during the boot-camp days. DT sessions were then facilitated by some of the companies’ employees or instructed facilitators, over a 9-hour workshop. A total of 50 teams were formed, composed by 3 to 6 people per team. Each challenge was addressed by 3 to 5 teams. Company representatives subsequently judged the proposed solutions at the end of each boot-camp day. The team proposing the winning concept was selected to further develop the idea in collaboration with “the challenger” to prepare for a final event. During the final event, 3 finalists were selected out of the competing 16 teams. The winning team received a prize of €1000, free office space, and coaching to work on the winning concept for a year.

Figure 6.1: research methods time line.

Table 6.1: Challenges description and category.

Theme	#	Question	Description	Sector
Circularity & Energy	Challenger 1	How can CO2 be of value in the energy transition?	Technical and economic feasibility of CO ₂ conversion into methanol for batteries in the mobility, industrial and energy sectors.	Biogas production and supply
	Challenger 2	How can we make an office like the Province house 100% waste-free?	Re-design flow of office materials beyond waste collection, tackling also employees' behavioural change.	Province
	Challenger 3	How do we create affordable and comfortable houses without gas for the ordinary citizen?	Matching the energy neutral measures already designed with inhabitants' wishes.	Installation and service provider in the utility, industry, government, healthcare and housing sectors
	Challenger 4	What will the skin of the house of the future look like?	Testing alternatives to brick walls for prefabricated houses which are durable and easy to build and maintain.	Construction company
	Challenger 5	How do we position existing basic furniture and office supplies in a circular fashion to furnish the working space of the future?	Concepts and methods to reuse office supply to refurnish new offices homogenously and suitably for new ways of working.	Architecture firm
	Challenger 6	How can we design an energy-neutral water pumping station?	Design of a CO ₂ neutral water pumping station which operates intermittently. In the remaining time, the pumping station produces renewable energy to be saved or shared with companies in the neighbourhood. Optimal uses of excessive energy production need to be designed.	Water management

The sustainable innovation challenge

Theme	#	Question	Description	Sector
Social innovation	Challenger 7	How can we increase our visibility as a sustainable partner in 100% natural products?	Strategy and action plan to reach a wider audience to raise awareness on natural products, tailored to the different targets.	Soil and animal products supply
	Challenger 8	How can solar panels serve as a secondary employment condition for our employees?	The company is installing 260 solar panels on the office roof and seek business models to make this a part of the employees' benefit package.	Painting company
	Challenger 9	How do we reach a fossil free region?	Design of an event in which inhabitants of the region are asked to do fossil-free activities for a certain period such as the previously organized "Elfwegentocht" ¹⁵	Network organization
	Challenger 10	How do we realize satisfied and energy-conscious tenants in our CO ₂ -neutral homes?	Communication and participation strategies for both renovated and newly built CO ₂ -neutral housing.	Social housing
	Challenger 11	How do we combine a sustainable personnel policy with flexibility in the cleaning services?	Solutions for flexible work from different potential employees without compromising the continuity required by the company's client.	Cleaning company (including emergency cleaning, e.g. asbestos removal)

¹⁵ Event in which people living in the region were asked to use fossil-free means of transport, the company is looking for a similar initiative as a follow-up.
<http://elfwegentocht.nl/english-parade/>

Theme	#	Question	Description	Sector
Sustainable Organization	Challenger 12	How can we incentivize our network of entrepreneurs to change and innovate?	Test of marketing strategies that stimulate entrepreneurs to change and be aware of new industry trends and disruption.	Management consulting company
	Challenger 13	Will paper completely disappear from our society or is there still a future for printed marketing communication?	New business strategy bridging the needs of end users and the company's customers. This follows scenario-thinking revealing what target groups might still need paper for marketing purposes.	Printing company
	Challenger 14	How can our college rapidly become paper free?	Research of alternatives to paper in education and the design of fundamental steps to achieve a zero-paper ambition. Thinking with students about a paperless education: from notebooks, napkins, meeting paper, magazines, test paper and even toilet paper.	Intermediate vocational education school
	Challenger 15	How can we optimally involve our employees in the fulfilling of our CO ₂ neutral ambition?	Ways to involve employees (i.e. people with low employability such as disables) in the CO ₂ neutral ambition to be achieved in 2023. This ambition includes services and production processes as well as employee's lifestyles.	Social employment
	Challenger 16	What role will IT play in the construction and development of high-tech offices?	Providing ways in which "internet of things" is changing the use and outlook of offices.	Office tools and supply provider

6.3.2 Data Gathering

Our approach consists of a systematic combination of grounded and abductive logic to case-study research (Dubois & Gadde, 2002). This approach is characterized by the continuous movement between empirical observation and theoretical explanations. The empirical observations include interviews with the challenge participants, participant observation, and secondary data. Before starting with the participant observation, and with the intention to investigate a process-query, we used a variety of data collection methods, including official and internal documents and informal interviews. The simultaneous methodological combination of retrospective and real-time data gathering techniques is key to mitigate the bias risk of retrospective interviews and archival data collection (Eisenhardt & Graebner, 2007). In the following section, we explain the different data-gathering approaches of this field research.

6.3.2.1 Participant Observation and action research

Starting from the challenge design phase, until its execution, the first author participated as a facilitator during the challenge. This implied contributing to the brainstorming of the companies' challenge questions (see Table 6.1), participating to DT training with the challengers' employees and providing support and instructions to the team members during the boot camp days. The second author joined as participant (see Figure 6.1), being a member of a different team on each boot-camp day. The objective was to observe both the "challenger" side as well as the "public" side in an independent manner. During the challenge we took field notes, made picture of the prototypes and of the visual material produced, and video recorded the final pitches.

6.3.2.2 Interviews

We conducted semi-structured interviews at four different times, namely: 1. before the start of the challenge; 2. on the day of the challenge (boot-camp day); 3. during the final pitch event; and 4. follow-up phone interviews to the challengers in September 2019 (11 months after the final-pitch event).

6.3.2.3 Archival data and participants' evaluations

As mentioned above, archival data were an important source for factual checks. We checked the company websites, online reports and the sustainable innovation challenge website to study the challenge descriptions. Finally, we evaluated the survey sent by the challenge organizers to the challengers and the participants.

Table 6.2: Semi-structured interviewed scheme followed during researchers' participant observation.

Interviewees	Context	Key questions
Challenger	Prior the start of the boot-camp	<ul style="list-style-type: none"> • Why are you participating in the challenge? • What's your ideal outcome? • How is the solution to the challenge you propose crucial for the success of your business? • Are you currently working on the challenge or is this something you plan to work on the (near/far) future? • How are you planning to integrate the outcome of this challenge in your R&D efforts? • What are your selection criteria for the "best" project? • What's the impact you want to achieve by taking this challenge? • Are you/your company familiar with design thinking? If yes, how when do you use it?
	During the boot-camps	<ul style="list-style-type: none"> • What's your impression of the process? • Do you have concerns about the participants? • Do you think the challenge is well-formulated?
	Final pitch-event	<ul style="list-style-type: none"> • Are you satisfied with challenge? Why? • What did you learn? • Are you going to work on this challenge with the participants? How?
	11 months after the final pitch-event	<ul style="list-style-type: none"> • What do you think of the challenge? • What did you learn from the challenge? • What are the main sustainability challenges your R&D department is facing right now? • Are you still following up on the idea/s developed during the contest? • How are you using the outcome of the challenge?
Participants	Prior the start of the boot-camps	<ul style="list-style-type: none"> • Why are you participating to the challenge? • What's your ideal outcome? • Are you familiar with design thinking? If yes, how when do you use it?
	During the boot-camps	<ul style="list-style-type: none"> • How are you experiencing it? • Is the challenge clear? • Do you feel like you can contribute to this challenge?
	After the boot-camp	<ul style="list-style-type: none"> • How was the design thinking process? • Are you happy with the outcome? • What was hard about the challenge?

6.3.3 Analytical Approach

The analysis was performed alongside the data collection process. We have approached the field with an interest in the “themes, categories, activities and patterns in the natural variation of the empirical data, not from a pre-given theoretical framework or a set of pre-formulated propositions” (Eriksson & Kovalainen, 2015, p. 129). After importing the interview transcripts, field notes, scans of relevant documents on Atlas.ti, version 8.0 we started with open coding, thus creating a code catalogue during the data analysis, not beforehand. When new themes and new categories emerged, we added them to our catalogue. The coding was performed independently by two of the authors in the first stage and then subsequently compared to identify common interpretations and meanings. Once we identified recurrent themes, we started looking for these themes in the literature. We then began an iterative process, moving back and forth between data and literature.

6.4 Findings

6.4.1 Drivers to participate in the sustainable innovation challenge

Table 6.3: Participant's reasons to join the Sustainable Innovation Challenge.

Interviewees	Interviewee's descriptions (1 st order)	Category (2 nd order)
Challenger	<ul style="list-style-type: none"> • New perspective (out of the box thinking) • Alternative technical solutions • New ideas and possible scenarios • How to realize it? 	Idea creation and novelty
	<ul style="list-style-type: none"> • Does it make sense what we do now? • Would you use it? • Should we do it differently? 	Validation
	<ul style="list-style-type: none"> • Finding partners with which to collaborate • Finding students willing to work on it • Gaining exposure in the region • Invited by business partner 	Network
	<ul style="list-style-type: none"> • How can we adapt our business to avoid disruption? • Is it viable for us to keep up to technological change? 	Business survival

Interviewees	Interviewee's descriptions (1 st order)	Category (2 nd order)
Participants	<ul style="list-style-type: none"> • New employment/field shift • Study project/internship 	Personal or (owned) company exposure
	<ul style="list-style-type: none"> • New field of interest • Part of study trajectory • Entrepreneurial ideas • Interest in sustainability issues 	Learning
	<ul style="list-style-type: none"> • Solving environmental and/or social issues 	Sustainability motives

The drivers identified ranged from a variety of challengers' needs, including: idea generation and novelty, validation of ideas, networking and business survival (see Table 6.3). Idea generation drivers identified in the analysis mostly referred to the generation of radical new ideas and perspectives. For instance, the manager of challenger 1 mentioned: *"We hope to get creative out-of-the-box ideas that we didn't think of ourselves yet"*. Furthermore, multiple challengers emphasized the generation of creative ideas in the process using alternative perspectives and scenarios. The identified validation drivers included improvements of an undergoing company innovation or experimentation and the reassurance of current ideas and practices. Our data suggests that, although idea generation and exposure were mentioned as motives to participate, both the challengers and the participants were seeking "reassuring" feedback on their practices or "suggestions for improvement" (as highlighted in Table 6.3). Reassurance was for instance mentioned by the manager of challenger 1: *"My objective today is to see if what we do makes sense and works also for people who are not busy thinking about it all day"*.

Network drivers identified in the analysis referred mostly to the need to find new partners and students to collaborate with, gaining exposure in the region and to respond to requests to cooperate in the challenge from business partners. For instance, the manager of challenger 5 mentioned that the challenge was a way to get social exposure in the region and find a new team to work with on the sustainable challenges the company was facing. Other challengers also highlighted their network as a cause for their participation. For instance, the manager of challenger 7 mentioned: *"I wouldn't have thought about doing this challenge myself. If I would not have been asked by one of the partners to participate, I probably would not have been here"*.

Finally, business survival drivers identified in our analysis include two types: 1) mitigating the effects of undergoing disruptions and 2) financial viability

of an undergoing sustainable business model innovation. An example of a survival issue to mitigate the consequences of the current disruption is the one posed by challenger 13, a printing company, seeking scenarios in which paper would still be needed in 20 years from now. As stated by the company's director before the beginning of the DT boot camp: *"we are busy surviving with our daily tasks and although we are aware of the fact that our businesses might soon come to an end, we don't know how to stop and think about new ways of working (...) we are already diversifying our business but it is hard for others to understand what we do if we do so many different things. I hope the people participating today can help me figure this out"*.

Also, the participants in the challenge mentioned multiple drivers including personal or company exposure –for small business owners–, learning, and sustainability motives (see Table 6.3). Personal or company exposure drivers referred mostly to the potential of finding a new employer through the challenge or the potential to get new company assignments. Learning drivers identified in the analysis consisted of drivers to learn more about the topic of sustainability and the issues experienced by companies in the region. For instance, as mentioned by a participant: *"I want to get new knowledge on sustainability challenges and discuss with others how to solve these challenges"*. Furthermore, multiple participants entered the challenge as part of their education. Finally, multiple participants mentioned their motivation to help solve sustainability issues in the region as a driver to participate. For instance, one participant mentioned that *"I really want to do something good for the world and help solve sustainable problems in the region"*.

6.4.2 Collaborative process

By analysing the collaborative process of DT, three main themes emerged: 1. the fit between the DT process (see Figure 6.1) and the type of sustainability challenge; 2. the interplay between challengers and participants; and 3. the relationship between time pressure and creativity of the ideas. We explain these themes below.

Figure 6.2: Timeline (with phases, sessions duration, and tasks) of the DT process adopted for the sustainable innovation challenge boot-camps.

6.4.3 User-centric approach: Process versus product challenges

Some of the challenges designed by the companies seemed to be easier to tackle than others. We identified two possible reasons for this: 1. the participants' background, knowledge and experience and, 2. the type of challenge. As can be seen in Table 6.1, some challenges were technical or product-oriented, whereas others were service or process oriented. Our data suggest that participants experienced difficulties in relating the human-centred approach of DT to the technical requirements of the product-oriented challenges. For instance, some participants mentioned: *"I do not know how to relate such a technical problem to the persona"*. Even when the initial challenge called for a technical solution, the outcome of the challenge resulted in the generation of process and people-oriented solutions. For example, one of the participants mentioned: *"We [the team of participants] are still not designing anything about a specific product they could use, I thought that that was their question. We are now focusing more on the process."* Secondly, participants had difficulties in solving the technically oriented challenges due to time constraints in the design-thinking process. Due to these constraints, participants were not able to collect and implement in-depth technical knowledge. For instance, the manager of ITBB mentioned that: *"I thought the groups would be able to search and implement more technical knowledge through their own knowledge and their ability to contact experts. Now I see that there was no time for that"*.

On the other hand, the DT process seemed to fit well to the challenges that included a people-oriented aspect, such as the challenge of the housing associations (*How do we realize satisfied and energy-conscious tenants in our CO₂-neutral homes?*). Within these challenges, participants argued that working with the users helped them to immediately test and evaluate their ideas: *"It was very nice and valuable for our work to be able to discuss with the tenant about it"* (participant, challenge housing associations). Furthermore, these people and process related challenges seemed easier to solve by teams of people with diverse backgrounds due to the common people focus and the reduced need for in-depth technological knowledge.

6.4.4 The interplay between challengers and participants

During the boot-camp days, the majority of the challengers were involved in the entire process, however in some challenges the challengers only interacted at the beginning and ending of the process. We identified multiple advantages of the active involvement of the challengers in the challenges. First of all, their involvement helped the teams of participants to deal with ambiguity and uncertainty within the challenge. It enabled the participants to ask questions to the challengers and test whether their solutions were developed in the right direction. For example, participants asked questions like *"Is this what you were*

looking for?”, “*Can your company work with this?*” and “*Is the direction we are thinking in valuable for you?*”. When there was a lack of involvement of the challengers in the process the teams of participants noted this as a problem: “*It is a pity that there is not more interaction with the company. Now, we are not sure whether they could actually benefit from our ideas?*”. This lack of involvement of the challengers caused uncertainty among the participants about their ideas and the added value of their solutions. Secondly, the involvement of the challengers helped the teams of participants to develop solutions that were better suited to the companies. For instance, the member of the organization team noted that: “*Ideas are worth nothing, everybody has ideas. Creative ideas might seem promising but when the company tries to implement this idea, they do not know how to do it. Either they discover that they do not have the resources or that the idea is not feasible for some other reasons. With DT this should not happen because people can already think about the implementation stage together with the companies?*”. Also, the challengers generally felt that their input facilitated the process of ideation and communication: “*My input was important to the team. I have 25 years of experience in energy and innovation. My role therefore was to help the team to reflect on the ideas and to reduce the enthusiasm of the teams if things that were proposed would not work. I have guided different teams also to prepare their pitches?*”.

On the other hand, the active involvement of the challengers also appeared to have downsides. Firstly, active involvement of challengers required a lot of time and investment on their side: “*The initial investment of time and resources of being physically there it’s a lot. I know we are asking a lot from these companies?*” (member of the organization team). It was noted that not all companies, especially those with limited resources, might have the ability to be actively involved in the process. Secondly, we found that the active involvement of the challengers might limit the generation of creative and radically new ideas by the teams of participants. Through their input, challengers sometimes discharged new ideas prematurely, made it difficult for the participants to brainstorm, and in some instances even took over the entire process: “*The conversation was mostly between the challenger and the user, leaving limited room for our team to ask questions and generate new ideas?*” (participant). In some cases, the active involvement of challengers, users and experts even shut down the creative process as participants got confused or were overwhelmed by the different perspectives and challenges mentioned: “*I just didn’t know what to do anymore. I did not know what our idea was, because we got so many ideas from different sides, it was very difficult as each time new challenges were mentioned by the company representative. I was afraid we wouldn’t come up with anything.*”.

During the process the problem of “limited time” was often mentioned by the participants. In multiple phases, including the problem definition, storyboard and fact-check (see Figure 6.1), the teams of participants felt that

they were in need of more time: *“When I finally felt like I was getting on to something I was asked to switch to the next phase”* (participant). These time pressures were often intensified by the inclusion of multiple different parties with different viewpoints including the challengers, the users and experts in the field: *“Involving the experts took a lot of time and their ideas did not really fit to our ideas and the wishes of the challenger. So, in the end, I was not so sure it was really valuable for us”* (participant).

The time pressures experienced by the teams led to two important issues. The focus of the teams sometimes drifted away from the user due to limited time to ask for and implement their opinions. Oftentimes, the participants felt that the involvement of users slowed down the process and made it difficult to come up with a practical solution within the time frame: *“We had a lot of conversations with the user, which was interesting in the beginning, but stopped us from getting to a more specific question in time because a lot of different problems were mentioned. We continue ending up with the same problems, what about the solution?”*.

6.4.5 Observed impact

6.4.5.1 New collaborations

Multiple companies have continued investing in the concepts developed during the challenge. The ones pursuing the concepts mentioned feasibility, fit with their mission, and possible implications, as main motives, as illustrated by these example quotes from some of the challengers:

Challenger 11 – *This was an idea that was close to our values and therefore could be worked out well. In addition, it was innovative but also feasible because the initiative fits in perfectly with our sustainability ambition.*

Challenger 8 – *We picked this because it has apparently risen in the political agenda and it is crucial according to the public opinion.*

Challenger 11 – *The development of this innovative and distinctive idea can help us, on the one hand, to retain employees and, on the other, to unburden clients to the maximum. In addition, we are responding to the social trend of flexibility.*

The winners and the finalists of the challenge are among the companies that decided to further invest on the outcome of the challenge. They invested in different ways, for example by hiring one of the participants to further investigate the development of a product and test it inside the company, or by offering employees the opportunity to work during their working time on developing the challenge further and, by outsourcing the development of the challenge to a different partner/company. For example, two of the finalist companies partnered to finance the solution proposed by the winning team.

Challenger 11 – *It turned out that we were a good match with challenger 15, and we are now working together to give people with a distance to the labour market a chance for a long-term job in cleaning.*

6.4.5.2 Deeper problem understanding

Other companies did not pursue the idea proposed, mentioning lack of innovativeness as main reasons: “*this was not really a very new idea, but we had not thought of it ourselves*” (challenger 14). Yet, other benefits were mentioned, including deepen understanding of the sustainability problem among the company members: “*That doesn't mean we weren't happy with the challenge. We got inspired and more familiar with the subject.*” (challenger 14)

Challenger 8 – *The challenge did help to boost this [sustainability question] internally as well.*

Challenger 14 – *For me the preparation for the challenge brought more insights than the challenge itself. I was surprised to find out how much paper we consume and also to know how many colleagues were concerned with sustainability issues, I had no idea.*

Challenger 8 – *What this challenge did to us was to increase awareness inside our companies about the problem. I would not say it brought us a ground breaking solution, certainly not.*

Challenger 14 – *Our supervisory board now takes the problem more seriously.*

Challenger 9 – *It is not really about the innovation of ideas, but about the innovation of people.*

Challenger 8 – *The challenge has helped us to see what is going on among young people, so that gives new insights.*

6.5 Discussion

SOI is highly important for firms in order to contribute to the sustainable development of our society (Klewitz & Hansen, 2014). Involving open innovation practices in SOI can be highly valuable in order to overcome the lack of knowledge on sustainability-related problems and reduce complexity and uncertainty inherent in SOI (Garcia et al., 2019; Hansen et al., 2011). However, the implementation of open innovation practices for SOI requires resources which are often lacking (Hansen et al., 2011). The combination of innovation contests involving the public and DT, can allow firms lacking innovation capabilities to get new ideas at low costs. This collaborative approach can assist firms in gaining understanding to the public's expectations and match the proposed ideas to their capabilities. Despite the recognized potential of open innovation practices in the form of innovation contests and DT for sustainable innovation, the combination of the two has

found little attention in the existing literature. With this research we illustrated how this combination can be achieved and what the expectations and benefits were as described by the beneficiaries. Our analysis led us to several relevant insights on the use of DT in the context of innovation contests and on the possible benefits of this approach.

6.5.1 Innovation contests using design thinking as a problem investigation tool

Although an important driver for the challengers to participate in the innovation contest was to generate new ideas, the challenge oftentimes did not facilitate this process as initially expected by the challengers. This may have been caused by several different factors including time limitations, the multidisciplinary composition of the teams, the involvement of company representatives, and the lack of technological knowledge from the participants. However, our study highlighted that the challenges did assist the challengers in generating more insights into the sustainability problems they faced. Despite not being as effective at proposing new solutions, the challenges did help increase understanding and awareness of the sustainability problems experienced by the challengers.

The collaborative and multidisciplinary nature of DT facilitated this through the involvement of different needs, ideas and perspectives of a diverse group of stakeholders. Furthermore, the involvement of the users in the challenges helped the participants to evaluate the problem from the user-side. Bringing insights into the problem is highly important in DT and innovation in general, since focusing on the solution to the wrong problems can be catastrophic. Furthermore, Hansen and Große-Dunker (2013) stress the importance of problem definition in SOI and argue that, despite its importance, this phase is often neglected. Our study provided insights into how firms can, through collaborative open innovation contests, gain more knowledge in the problem definition phase of SOI.

This can be a useful approach for companies lacking innovation capabilities to generate a comprehensive understanding of the sustainability problems they face, ask the right questions and, consequently, find fitting solutions. Given these considerations, collaborative innovation challenges could be a way to build experimentation capabilities. This type of capability has been identified as the most important capability to innovate (Thomke, 2001), also in the context of triple bottom line value creation (Weissbrod & Bocken, 2017). In the context of open innovation initiatives, “The ideal experiment is quick to run, doesn’t cost much and tells you a great deal of information” (Chesbrough, 2006, p. 199). In contrast to experiments producing causal knowledge (in a controlled environment), experiments producing

sustainability knowledge (with no control) focus on understanding “the multiple and interacting social, economic, cultural and ecological factors that lead to the emergence of sustainability problems. Sustainability experiments can provide evidence about the complex and systemic causes that underpin the emergence and persistence of certain problems.” (Caniglia et al., 2017, p. 41). Experiments on problems produce evidence based causal knowledge that is descriptive and explanatory. The knowledge supported by these experiments is actionable (Wiek et al., 2012) as it provides instructions on strategies that can solve (or mitigate) certain problems (or its effects).”

6.5.2 Collaborative innovation contests involving design thinking to bridge solutions proposed with the capabilities of firms.

Our case study highlighted the importance of the collaborative approach taken in the innovation contest. Through the use of a DT, company representatives were able to become involved with the teams of participants and assist them in creating ideas that were valuable for the company. This is different from traditional innovation contests, where companies formulate challenges and distribute these to the public, often via the internet, without being actively involved with the public. However, viewing the public as an information source, rather than a co-creator of SOI can hinder mutual understanding and lead to a mismatch between the proposed ideas and the company’s capabilities to implement these ideas (Enkel et al., 2009).

Our results indicate that DT can be used to bridge the gap between the solutions proposed in innovation contests and the capabilities of firms seeking to implement these solutions. Through the multidisciplinary and collaborative nature of DT, the innovation contest allowed for the inclusion of multiple perspectives, including those of the company representatives. Furthermore, through a constant feedback loop between the public, users and companies, the participant ideas could be fitted to the company and its context throughout their development. This feedback loop is highly important as it can increase the value of externally-acquired knowledge for the SOI of firms (Ghassim & Bogers, 2019).

Furthermore, such collaborative processes can help firms to view the public as an important co-creator of SOI, thus creating new collaborative relationships and developing a trust-based dialogue where shared value is generated (Ghassim & Bogers, 2019). However, an extensive involvement of company representatives, combined with the time-limitations of the innovation contest, may compromise the creativity of the proposed solutions. Our case highlights that there might be trade-off between the newness of the ideas and the fit of the ideas to the company’s capabilities. This potential trade-off is important for companies to consider when designing innovation

challenges. Although the generation of new ideas is a main premise of open innovation (Olsen et al., 2016), the collaborative innovation contests may not be the optimal vehicle for the generation of radical new ideas.

6.5.3 Types of sustainability challenges suited for innovation contests projects using design thinking

Our data also invites future research to better explore the specific type of sustainability challenges for which DT is an optimal tool. If this is the case, then different categories or types of sustainability challenges should be tackled through different approaches.

Behnam et al. (2018) already differentiate between innovation types for sustainability that can be generated through open innovations approaches: “innovations aimed at developing an innovative product or service, which incrementally modify the existing systems, and innovations aimed at developing a product-service system, which disruptively change user behaviour” (Behnam et al., 2018, p. 960). Indeed, in this case the success of the boot-camps, as deemed by the challenger, differed per type of challenge.

Our data suggests that for what we categorized as process-oriented innovation – despite producing innovative products – the result of the challenge was considered satisfactory by the challengers. Contrarily, the participants of product-based challenges considered the process complex, either considering the “challenge too technical” or “the time too short” to dig into the technical details. These time constraints were intensified due to the involvement of participants, users and company representatives with diverse (non-designer) backgrounds. These considerations fuel the debate on the suitability of DT for specific types of challenges and/or to specific types of (non-designer) team members (Seidel & Fixson, 2013) combined with temporal considerations. One of the promises of DT it to be suitable for any innovation, irrespectively of the problem. However, in this particular context the specific challenge seemed to matter.

6.5.4 Limitations & future research

The limitations presented in this study are multiple and typical of single case study research approaches. Here we discuss these and suggest improvements.

Our data implies that the perceived benefits of using innovation contests is larger for companies who lack the resources to innovate. However, these were also the companies that seemed to have fewer resources to bring the concept ideas forward and that, contrarily to larger firms, did not actively continued to work on the challenge outcome. Among our interviewees, the ones that mentioned lack of partners and survival issues as drivers to participate seemed to be keener to invest in the generated ideas after the boot

camps. These types of drivers appear to emerge from a lack of organizations' capability responsible to the organization resilience to effectively manage disruptive innovation (Moore & Manring, 2009). Among these capabilities, network capabilities are identified as important for open innovation (Behnam et al., 2018) and survival (Moore & Manring, 2009). However, the company mentioning these lack formal R&D departments and did not engage in open innovation initiatives before. Hence, it is possible that for small companies, innovation contests could provide a learning experience, providing awareness of new ideas and problems, but not providing solutions, due to a lack of capabilities. Contrarily, for larger companies' innovation contests could function as change catalyst, as larger firms already have the capabilities to put the idea into action. Further research could test if that's indeed the case.

In some instances, the outcome of the boot-camps was considered either "creative" but not feasible or "very feasible but not so creative". In other words, an out-of-the-box idea might be the real solutions yet too difficult for the company to implement. Future research could systematically test the involvement of the employees on the outcomes of R&D challenged based open innovation projects. What would be the optimum level of involvement of companies without damaging the creativity of the participants? Subsequently, whether the lack of new idea generation was due to the active involvement of the challengers, due to time constraints or due to the type of challenge, should be further investigated. This might also have been caused by a particular team composition, in which more or less creative participants were grouped in the DT process. Finally, our data also suggested that the user and company involvement sometimes was constituting a barrier to the problem definition and the prototyping of the idea. Probably the DT phases could be arranged differently depending on the type of challenges. Further study could investigate the effect of the user involvement in different stages of the DT process. When should the user be involved, when not?

6.5.5 Conclusions and highlights

We contribute to the already growing body of literature on the use of DT in innovation, strengthening the implicit link between business experimentation, DT and open innovation by suggesting that the benefit of open innovation and DT enforce each other and generate positive sustainable innovation outcomes. Hence, in sustainability problems in which users' behaviour is key, DT can develop solutions matching user's needs granting a higher level of success.

This research provided insights into how small and medium enterprises can use this type of challenges for sustainability-oriented innovation. The contribution of this research is threefold. Firstly, a definition of collaborative

innovation contests is introduced. These are innovation contests that involve close collaborations between the challenge participants and companies proposing the contest objective. These types of contests are different from traditional innovation contests, where companies formulate challenges and distribute these to the public, often via the internet, without being actively involved with the public. However, viewing the public as an information source, rather than a co-creator of SOI can hinder mutual understanding and lead to a mismatch between the proposed ideas and the company's capabilities to implement these ideas (Enkel et al., 2009). Collaborative innovation contests are thus a promising catalyst of SOI.

Secondly, as already mentioned, in this specific case, the collaborative innovation contest was facilitated through DT. DT can potentially bridge the mismatch between open innovation outcomes and company capabilities to adopt such innovation. The data presented in this chapter show that process-oriented challenges are easier to be addressed through DT by non-expert designers. Contrarily, product-driven innovations require expertise that might lack among the participants involved in the contests.

Thirdly, the analysis included the impact of the contests on the company studied in two different moments: right after the end of the contests period and after one year. The analysis revealed two main consequences of the innovation contests: 1. the creation of new collaborations and, 2. A perceived improvement of the understanding of the sustainability problem addressed by the challenge. The latter is important because problem definition is antecedent to the design of effective solutions. Many of the sustainability-oriented innovation that fail, often treat the symptoms of a sustainability problem, without addressing its cause. Focusing on the wrong problem, is one of the critiques to many of the sustainability solutions available today.

PART III

Conclusions

*“Research is to see what everybody else has seen,
and to think what nobody else has thought.”*

Albert Szent-Györgyi

7 Conclusions and recommendations

7.1 Introduction to the conclusions

Understanding how to transform existing organizations into sustainable enterprises is crucial for sustainable development. This is the point of departure of this PhD dissertation, which aimed at understanding how existing organization can induce and maintain the process of sustainable entrepreneurship.

The research performed to answer the main research question, not only resulted in important implication for practices, it also addresses a fundamental literature gap identified with the literature review reported in Chapter 2. In this review, we could not find comprehensive longitudinal studies on how individuals successfully balance the economic, social and environmental dimensions in organizations that are originally designed to pursue only one or two of these dimensions. This research gap is the main reason for the research presented in this thesis. It aligns with the need to understand the transition or transformation from mainstream to sustainable enterprises or from a double bottom line to a triple bottom line enterprise.

In order to comprehend organizations characterized by an inherent double-bottom-line DNA, the first two empirical projects drew from the literature on hybrid organizations. These are defined as organizations that combine logics, identities and/or goals that conventionally do not go together (Battilana et al., 2017). Understanding whether and how hybrid organizations successfully adapt to change is crucial, yet seldom addressed in the literature (Zollo et al., 2013).

Simultaneously, Alpha, the case organization and object of this study –of which organizational type has been categorized by past scholars as hybrid (Boelhouwer, 2007; Gruis, 2008)– was facing the need to integrate new sustainability logics within its strategy. This is the case of an established hybrid organization, with a social mission, integrating climate mitigation measures as a new, core strategy. In order to implement this strategy, a new

product is introduced: the energy neutral house. For the type of houses owned by the housing associations, the technological solutions to transform them into energy neutral houses are new and costly. Moreover, a number of social challenges arise among the housing association's target group, such as increase in poverty, refugees' request for housing and aging tenants.

Therefore, this research was characterized by a dual goal: (i) Conducting a grounded study to fill a relevant knowledge gap, and (ii) Making this knowledge actionable to the case organization(s) to aid the sustainability transition happening in real time. This dual research goal revealed the need to adopt methods which align with the transdisciplinary research paradigm. Transdisciplinarity is an emerging and grounded approach. It advocates the integration of practice and research, and a methodological exchange across disciplines (Shrivastava et al., 2013). A transdisciplinary researcher uses challenges from the business contexts or the natural environment to design the research questions, in combination with a theoretical gap.

In the following section, each of the main answers to this PhD research question is explained in detail. This chapter is structured as follow: We begin by providing an answer to the main research question, explaining the objective of each empirical project/chapter and their conclusions. We then provide recommendation for future research, by showing the missing link between the phenomena discovered with this research and suggestion new research questions. Subsequently, we provide an overview of the practical implications of this research, both for housing associations in particular, and for organizations interested in integrating new sustainability demands in their strategy, in general. We conclude by including some reflections on transdisciplinary research which can serve as learning for new researchers embarking on similar research journeys.

7.2 Answering the research question

The research question formulated at the beginning of this study was:

How is the sustainable entrepreneurship process induced and maintained in the context of existing organizations?

This PhD research identified four main ways in which existing organization can initiate and maintain the sustainable entrepreneurship process, namely:

1. Through leadership, i.e. a change agent who can induce the sustainability transition and that can build a network of external stakeholders supporting and enforcing such transition (see Chapter 3);

2. Through identity reflexivity, which allows the alignment of internal organizational identities with external organizational demands (see Chapter 4);
3. By adopting a responsive approach to sustainability as opposed to a primarily proactive or reactive stance to environmental or social interventions (see Chapter 5);
4. Through collaborative innovation initiatives, such as open innovation contests, which help existing organizations reframe the sustainability problem they should solve, and build new collaborations (see Chapter 6).

Each of these answers was addressed through four different empirical analyses, each described in a different chapter. Below these answers are further explained.

The analysis reported in Chapter 3, highlights a prominent role of leadership in the initiation of the sustainable entrepreneurship process. To analyze the specific case organization Alpha, we build upon the literature on sustainable business model innovation (SBMI). SBMI is a business model innovation (BMI) that incorporates the three pillars of people, planet, and profit (Bocken et al., 2014) known as ‘triple bottom line’ (Elkington, 1997) value creation. BMI concerns the transformation of one or more of the business model aspects. These include value proposition, value creation and/or delivery, and value capture (Bocken et al., 2014). In the case of Alpha, a new product was introduced. The analysis identified four distinct phases for the SBMI process, namely: 1. Induction, 2. Resistance, 3. Preservation, and 4. Momentum. We identified these phases in the context of a hybrid organization with a hierarchical structure tending to a regime of organizational inertia.

The first main factors contributing to the induction of the SBMI process in the case organization Alpha, were found to be the creation of a network of change makers parallel to –or following– a strong leader’s vision. When the innovation at stake is still in the development stage, building support outside the organizational boundaries (e.g. with suppliers willing to experiment with new technologies or with local governments or NGOs favoring pilots) is a necessary condition, albeit insufficient, to initiate the process of SBMI. Given the hierarchical structure of the Alpha organization, the change could be imposed through the drafting of a new portfolio plan.

What followed was a phase of resistance, in which organizational members strived to maintain the status quo (Hannan and Freeman, 1984). This phase was characterized by conflicts among organizational members of different departments, supported and related to conflicting aspects of the change. Specifically, in the case of Alpha, environmental demands conflicted with

social and financial demands. As such, the conflicts where among people undertaking responsibilities for different organizational aspects, e.g. the asset managers who calculate feasibility aspects versus the client communication managers, who deal with social needs. However, given the organizational performance, we argued that organizational members' conflicts among the different aspects of the TBL are beneficial to maintain a balance among the conflicting sustainability demands.

The period of observation was characterized, by coincidence, by the resignation of Alpha's CEO. This allowed us to observe whether, and if so, how, organizational members would have pushed to get back to the situation prior the introduction of the SBMI. The analysis revealed that organizational members had acquired a new routine, and were in fact striving to preserve it. When the new CEO of Alpha imposed a new change, resistance towards this change occurred again. The organization had transitioned itself into a new phase of inertia for which a momentum for the SBMI was gained and achieved.

While the analysis revealed four key phases for the SBMI process within Alpha, the research was not sufficiently able to provide real-time explanations for how the new vision of Alpha –offering antecedents of the SBMI process– was formed. The decision for the SBMI in Alpha was undertaken prior to the direct observion period.

What could be observed however, is how arguments to justify decisions were built and used to generate change within Alpha. Chapter 4 provides insights into this aspect by focusing on dual organizational identity which is typical of organizations such as Alpha characterized by a strong social mission (Moss et al., 2011). For this chapter, we build upon the heuristics and the identity literature. An identity-based approach (Foreman and Whetten, 2002) provides useful lenses to study conflicts between social and financial goals since they relate to individual knowledge, competences, and social relations, which all influence one's decision-making (Wry and York, 2017). Simultaneously, given that individual decision-making processes are complex, heuristics –intended as simple rules and biases that guide decision-making-, are therefore often used to simplify reality.

The findings highlighted in Chapter 3 were confirmed in Chapter 4: the conflicts between identities appeared to be predominant in the analysis of Alpha. Chapter 4 shows that in hybrid organizations such as Alpha, conflicting organizational identities can hamper the process of SBMI (Jay, 2011). We argued that understanding how managers with conflicting identities achieve agreements is important to help organizational leaders to pursue sustainability-oriented strategy change. In Chapter 4, we identified the

mechanism of identity reflexivity and that this facilitates the decision-making process within the context of strategy change for SBMI in hybrid organizations such as Alpha. We showed that managers (i) relate their personal expectations to their perceived expectations of the organization (internal reflexivity), and (ii) to what they perceive to be the clients' expectations toward the organizations (external reflexivity), in order to (iii) either approve or reject the arguments of the opposing identity, that is, the person that has norms, values and behavior opposite to their own.

Chapter 4 showed that conflicting demands and competing identities often result in paradoxical goals. As highlighted by the sustainable entrepreneurship literature (see Chapter 2), the activities of sustainable entrepreneurs should ultimately result in a positive societal and environmental impact. However, daily practice shows that this is not always the case. When organizations combine multiple sustainable development goals, there is a significant risk of causing unintended consequences in which, for example, the pursuing of an environmental goal can compromise the pursue of a social mission, as argued in Chapter 5. Contrarily to what is generally claimed in the literature on business sustainability, specifically the literature referring to corporate social responsibility (Chang, 2015), this PhD research shows that a proactive approach for tackling environmental and societal goals simultaneously is not always best.

One of the main conclusions presented in Chapter 5 is that when the sustainability goals that will be addressed by an organization are characterized by paradoxical relationships (meaning that they are contradicting yet interrelated), the poor management of tensions hinders the organization's proactive stance, resulting in unintended, negative consequences. We conclude that a responsive approach is to be preferred when combining multiple sustainable development goals in one organization. Such a responsive approach could consist of a user-centric approach to change (in which the concerns of users are addressed early in the process). In the case of Alpha we concluded that instead of striving for a large scale transition in the shortest time possible (as expressed by the leader's ambition to refurbish one house per day), testing through prototyping and hence, responding to a user's feedback, would have been more desirable. This is in line with the principles of human-centered design approaches such as design thinking, which advocate a "fail cheap and fail early" approach.

Design thinking is a helpful approach for organizations such as Alpha that strive to solve multiple sustainable development goals simultaneously. Design thinking is appropriate due to its experimenting characteristics and we therefore conducted an action research project presented in Chapter 6. For

this, we had the unique opportunity to facilitate a series of workshops in the contest of the Duurzame Innovatie Challenge Fryslân 2018. This unique research setting provided insights into how small- and medium-sized enterprises can use this type of challenge for sustainability-oriented innovations. The contributions presented in Chapter 6 are threefold. First, we introduced a definition of collaborative innovation contests. These settings concern innovation contests that involve close collaboration between the participants that join the challenge and the companies proposing the contest's objectives. These types of contests are different from more traditional innovation contests, where companies formulate challenges *ex ante* and share this in public, often anonymously via the internet, without being actively involved with the challenge and the public parties *ex post*. However, viewing the public as an information source only, rather than a co-creator of sustainable open innovations can hinder mutual understanding and lead to a mismatch between proposed ideas/solutions and the company's capabilities to implement these ideas (Enkel et al., 2009). Collaborative innovation contests such as the one defined and studied in Chapter 6 are therefore a preferred catalysts of sustainable open innovations.

Second, the collaborative innovation contest presented in Chapter 6 was facilitated through design thinking. Design thinking can potentially bridge the mismatch between open innovation outcomes and company capabilities to adopt such innovation. The data and results presented in this chapter show that process-oriented challenges are easier to be addressed through design thinking by non-expert designers than product-driven innovations. These require expertise that might lack among the participants involved in the contests.

Third, the analysis in Chapter 6 included the analysis of the impact of the contests on the case companies in two different moments: immediately after the end of the contest period and after one year. This intertemporal analysis revealed two main consequences of the innovation contests: 1. the creation of new collaborations, and 2. a perceived improvement of the understanding of the sustainability problem addressed by the challenge. The latter is deemed particularly important because problem definition is antecedent to the design of effective solutions. Many of the sustainability-oriented innovations that fail, often treat the symptoms of a sustainability problem, without addressing its cause. Focusing on the wrong problem so to say, is one of the main critiques to many of the sustainability solutions available nowadays.

The following table summarizes the results of the research projects presented in the empirical chapters of this thesis and relates the main findings to the

research question at hand. The following table summarizes the highlights of each chapter.

Table 7.1: Results overview.

Chapter title	Research questions	Results highlights
2. Sustainable entrepreneurship: Definitions, themes and research gaps	<p>How can we define sustainable entrepreneurship?</p> <p>How is sustainable entrepreneurship informing existing businesses to transform sustainably?</p>	<ul style="list-style-type: none"> • Sustainable entrepreneurship can be defined as the process that strives to achieve positive environmental, societal, and economic impact through business. • Entrepreneurship can include, but it is not restricted to, the creation of new enterprise. • Theories of sustainable entrepreneurship can be used to understand how existing businesses can transform to improve their environmental and social impacts.
3. Phases of sustainable business model innovation: organizational responses in a hybrid context	<p>How can highly regulated hybrid organizations induce and maintain sustainable business model innovation (SBMI)?</p>	<ul style="list-style-type: none"> • When the innovation at stake is still in the development stage, building support outside the organizational boundaries, is a necessary but insufficient condition to initiate the process of SBMI. • In a downward hierarchical organizational structure, entrepreneurial leaders with an environmental or social drive can induce the SBMI process, irrespective of the organizations' internal capabilities and internal legitimacy. • Organizational members' conflicts among the different aspects of the TBL, are beneficial to maintain a balance among these aspects.

Chapter title	Research questions	Results highlights
4. Identity Reflexivity: A Framework of Heuristics for Strategy Change	How does a dual organizational identity influence a manager's heuristic in the process of strategy design aimed at achieving a new sustainability goal?	<ul style="list-style-type: none"> • Conflicting organizational identities bias managers' interpretations and decision-making. • Paths of cognitive shortcuts, here defined as internal and external identity reflexivity, are shared by conflicting identities while designing a new strategy. • Managers' perceived legitimacy of a new sustainable target (e.g. societal acceptance of a new energy transition goal) affects decision-making in sustainable strategy design through external identity reflexivity. • Individual level heuristics influence heuristics at the organizational level through the mechanism of external and internal identity reflexivity.
5. Combining SDGs: the need for a responsive approach in strategy change to manage sustainability paradoxes	How can the unintended consequences resulting from the simultaneous combination of conflicting yet interrelated sustainable development goals be mitigated?	<ul style="list-style-type: none"> • New types of paradoxes occurring when combining environmental and social goals in the context of social housing associations are identified: namely: performing, planning, involvement, and impact paradoxes. • Proactive approaches to sustainability do not always lead to positive social impacts. • Responsive approaches are suggested when combining SDGs that shows paradoxical relationships among each other.
6. Experimentation for sustainability through collaborative innovation contests: the case of the sustainable innovation challenge	How can collaborative innovation contests, involving design thinking, be used by businesses to accelerate sustainability-oriented innovation?	<ul style="list-style-type: none"> • Collaborative innovation contests are a promising catalyst of SOI. • Collaborative innovation contest can assist firms in gaining a comprehensive understanding of the sustainability problems they are facing. • Design thinking can potentially bridge the mismatch between open innovation outcomes and company capabilities to adopt such innovation. • Design Thinking methodology should be better calibrated to the type of challenge as it appears not to be suitable just for every sustainability related question.

7.3 Recommendation for future research

The key aspects addressed in Chapters 3, 4, and 5 were organizational inertia, conflicting organizational identities and sustainability paradoxes, respectively. For simplicity, and in order to disentangle the complexity involved for each of these phenomena, each of these were addressed separately in a research project and chapter. However, despite their separate studies, the phenomena occurred simultaneously and therefore deserve a holistic and integrated perspective in order to come to grips with the over-all complexity of how organizations can change for good and transform existing businesses into sustainable enterprises.

Therefore, this PhD invites future research to undertake a more holistic approach to these phenomena. Understanding the relationships between the three aspects –i.e., inertia, conflicting identities and sustainability paradoxes– is challenging given the specific research methodologies adopted in the various chapters in this thesis. The three phenomena were studied by looking at the interaction between individual and organizational responses, and between organizational and societal responses.

There might be an intrinsic relationship among the three phenomena. What was observed is that, although the understanding of sustainability paradoxes can activate strategic change within an organization, these paradoxes could also feed inertia while freezing decision-making due to the conflicting identities characterizing hybrid organizations such as Alpha. These concepts are presented in the figure below.

Figure 7.1: How sustainability paradoxes could lead to inertia (individuals' reluctance to change) in hybrid organizations when different identities are in conflict.

The phenomena tackled in this research are inherently complex (Berger & Kuckertz, 2016). The understanding of the business modelling innovation process, for example, where the interplay between poverty alleviation, climate change, and financial solutions played such important roles, called for a longitudinal research approach, while attempting to simplify the systematic analysis of theory and practice. We developed the research in the setting of a case company Alpha, a social housing association in the North of the Netherlands. Alpha offered a unique longitudinal opportunity to develop and apply a wide range of research methods needed to understand the underlying causalities in the transition from a regular to a sustainable enterprise. That said, this PhD research aligns with the limitations of single case-study research, in which empirical observations might relate to the unique features of the case organization. Future research may study whether and how differences in triggers and organization-al/regional/national contexts matter for the inertia and other crucial features identified here. Other types of social purpose organizations, for ex-ample, may face other and different institutional constraints and dynamics in their contexts. It would be worthwhile to study whether and how other organizational features and contexts matter for the main research question studied in this PhD thesis.

Our case organization provides evidence that is useful to compare change processes between mainstream and hybrid enterprises and with leadership found as a key factor for business model innovation. Yet, many questions remain unanswered. Whether and how imprinting and inertia may originate from a CEO replacement or from the organizational type and services provided deserves more research. Future research along the lines presented in this PhD thesis would enable us to study and compare the role of leadership in sustainable business model innovations. Also, the social DNA of the case company studied in this PhD thesis might, despite its uniqueness, influence and bias the way the TBL is balanced and maintained. For instance, how are organizations with an environmental DNA integrating new social demands in the process of sustainable business model innovation?

This PhD research has shown that when sustainability goals are characterized by paradoxical relationships, meaning that they are contradicting yet interrelated, a poor management of tensions hinders the organization's proactive stance, resulting in unintended, negative consequences. It is proposed that a responsive approach is to be preferred when combining multiple sustainable development goals. This could consist of a user-centric approach to change, in which concerns of users are addressed early in the process. In the case organization studied in this PhD thesis, for instance, instead of striving for a large-scale transition in the shortest time possible (e.g. by refurbishing one house per day), testing through proto-typing –and in so

doing responding to user feedback in iterative cycles– would be preferred. This is easier said than done. Having been embedded in the case organization for over two years, we know that there are limitations of this context to effectively apply this strategy. Thus, a question for future research –though context specific– is: How can social housing associations effectively adopt human centred approaches at low costs?

Finally, the integration of multiple SDGs was challenging in this context. Since the 17 SDGs are clearly defined and are in place, which of these goals risk to generate more paradoxical relationship among each other? Are there specific conflicting SDG of which strategy makers should be aware of? And in a similar vein instead, what are winning SDGs combinations that should be endorsed? Additionally, and in this context, can the identification of sustainability paradoxes be used to manage the risk of unintended consequences in both, social and for-profit enterprises?

7.3.1 Recommendations for practice

The first three projects of this PhD research used the context of a social housing association. Nonetheless, the results and insights presented in this PhD research has implications for managers of other public organizations and for-profit firms.

First, the findings of this research offer guidelines for local governments when promoting positive social change for organizations known to be change inherently resistant. External legitimacy in particular was found to be a prerequisite to internal changes in the induction phase. Prior research suggests that all organizations should be agile, innovative, and continuously open to change (e.g. Annosi et al., 2018). Although we support this view, this PhD study suggests that this is unlikely for mission driven and institutionalized hybrid organizations. In other words: is it feasible or perhaps even desirable to change all existing organizations, profit and not-for profit, governmental and non-governmental organizations, into agile ones, always ready to innovate and transform themselves? The positive effects of inertia reported in this study suggest otherwise. Hybrid organizations reluctant to change can benefit from their intrinsic mechanisms of inertia, in order to successfully create enduring positive social change.

Second, this PhD research highlights the importance of the hierarchy of the triple bottom line of sustainability. Nowadays, almost all managers may have learned about the notion of the triple bottom line of people, planet and profit. Despite the critiques of the triple-bottom line, this concept has served managers as useful framework to think about different types of impacts and strategies for sustainability. With this thesis we highlight a hierarchical order

that could further guide managers in their strategy design, namely that: there would not be Profit without People and there would not be People without a Planet. In line with contemporaneous sustainability research, this PhD thesis highlights the importance of the hierarchical order among the pillars of the triple bottom line of sustainability in organizations and the importance thereof for the design, implementation and management of new sustainability strategies. The interrelatedness between the three dimensions of sustainability in organizations is rather decisive. In a capitalist society it is often argued that to address environmental sustainability (Planet), there needs to be a business case (Profit) for it. This thesis is also intended to add and highlight the interrelatedness among these three pillars: for a business case to exist (Profit), there needs to be a satisfied need of a user target groups (People). In other words, the key recommendation of this PhD thesis is that People need to be addressed in order to save the Planet through Profit. If this statement potentially requires ethical concerns for managers in for-profit organizations –and after all, not all managers are, nor potentially should be, sustainable entrepreneurs– it is recommended to consider the business aspect of sustainability. If managers would follow the money, the manager's role is of crucial importance for a truly sustainable enterprise.

Third, although the importance of user-centric and problem-centric design principles for entrepreneurs is not new, this PhD research highlights the importance of satisfied target groups as the key to successfully transforming business in sustainable ones.

For sustainability transitions to occur, technological and social innovations are equally important. Innovative solutions for sustainability problems will only be effective when they will be endorsed and adopted by the users. This is one of the reasons why, integrating user-centric approaches in the process of sustainable innovation is so important. Adopting user-centric innovation approaches will not only help designing more effective sustainable solutions but will also mitigate the risks of unintended consequences.

7.3.2 A final note on the role of “active” researchers

By conducting action research during the process of strategy forming, we aimed to facilitate sense-making and help the case company managers navigate through the various sustainability paradoxes. During our active participation in the strategy formation workshops, we invited the management team to recognize and acknowledge the principles of environmental integrity, economic prosperity, and social equity in their strategy and vision.

Although different scholars have been performing action research with teams of managers, and in doing so claiming its role in affecting organizational change (e.g. Lüscher & Lewis (2008), the potential of action research approaches in organizational design for sustainable development (Zuber-Skerritt, 2012) has not been explored much in the literature. The interaction between the academic and the corporate world –offering a source of debate on the dichotomy between theory and practice– is still predominantly informative nowadays, especially with respect to sustainability questions. In contrast to the more passive view of academic scholars –and one in which academic researchers are advised to acquire data, advise, or offer evidence that supports decision-making– action research supports a collaborative approach with shared responsibilities and efforts and with combining different sets of academic and corporate expertise in a transdisciplinary fashion.

Although we are aware that measuring the exact impact of an active researcher is potentially challenging, the experience of doing action and transdisciplinary research presented in this PhD thesis aligned with encountering a sense of trust towards academic scholars by managers. This trust enabled an alternative framing approach of the problem that was jointly addressed by the managers and the academic scholars.

This sense of trust among academic scholars and the business managers that participated in this PhD research resulted in a new framing introduced by academic scholars and accepted by business managers– and one which was different from what the organization was used to. This was perhaps among the main mechanism facilitating the design of a new strategy for the case organization Alpha.

I therefore encourage future researchers to advance methodological and theoretical knowledge on the unique potential of action and transdisciplinary research for sustainable strategy development and, in doing so, the transition towards more sustainable societies.

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Samenvatting

Hoe kunnen bestaande organisaties het proces van duurzaam ondernemen stimuleren en in stand houden?

Omdat duurzame ontwikkeling niet kan plaatsvinden zonder duurzame organisaties is inzicht in hoe organisaties verduurzaamt kunnen worden essentieel. Dit onderzoek is gebaseerd op de literatuur over duurzaam ondernemerschap en analyseert hoe bestaande organisaties de transitie naar duurzame ondernemingen kunnen maken. De activiteiten van een duurzame onderneming komen overeen met de doelstellingen voor duurzame ontwikkeling. Na een conceptuele analyse van de kernconcepten van de literatuur over duurzaam ondernemerschap worden de resultaten van vier empirische projecten gepresenteerd.

Het eerste project is gebaseerd op empirische observaties die voortvloeien uit een tweejarige etnografische studie bij een woningcorporatie. Deze woningcorporatie implementeerde een nieuwe strategie met het doel de volledige portefeuille energieneutraal te maken. De etnografische methodologie maakte een meerjarige observatie mogelijk. In dit project is het proces van duurzame bedrijfsmodelinnovatie in de context van een organisatie gedreven door een sociale missie geanalyseerd. De resultaten benadrukken de belangrijke rol van leiderschap en het organisatienetwerk in het initiëren van een duurzame bedrijfstransformatie. Deze bevindingen worden beschreven in hoofdstuk 3.

Gezien het hiërarchische karakter van de case-organisatie, concentreerde de tweede studie zich op het besluitvormingsproces van de organisatiemanagers. Deze studie resulteerde in een theorie over heuristiek –gedefinieerd als eenvoudige cognitieve regels en vooroordelen die worden gebruikt om complexe beslissingen te nemen– met betrekking tot sociale, ecologische en financiële duurzaamheid. Deze bevindingen worden beschreven in hoofdstuk 4.

De aspecten van duurzaamheid zijn vaak paradoxaal. Daarom werd de paradox als lens gebruikt voor de derde studie waarin actieonderzoek werd gebruikt als methodologie. Dit project is bedoeld om strategieën te zoeken die het risico op onbedoelde gevolgen van de combinatie van de tegenstrijdige maar onderling samenhangende eisen van duurzaamheid kunnen verkleinen. In dit onderzoek zijn verschillende nieuwe typen duurzaamheidsparadox geïdentificeerd. Ook de relatie tussen paradoxen en de onopzettelijke gevolgen wordt in deze studie benadrukt. Deze bevindingen zijn beschreven in hoofdstuk 5.

Terwijl de eerste drie projecten zich focusten op duurzaamheidsgerichte transitie binnen de grenzen van een organisatie, onderzocht de vierde studie een oplossing om dit proces te initiëren wanneer organisaties de middelen missen om dit intern te doen. Deze studie biedt inzicht in hoe bedrijven open innovatie-uitdagingen kunnen gebruiken om hun duurzaamheidstransitie te versnellen. Dit project onderzocht de “Duurzame innovatie challenge Fryslân 2018” als casestudie en analyseerde het ontwerpproces en de resultaten van deze publieke wedstrijd. Dit project onderzocht ook de motivatie van de deelnemers –waaronder studenten, werkzoekenden en inwoners– en de motivatie van de 16 organisaties die een uitdaging aan het publiek voorlegden om op te lossen. Deze studie concludeert dat het gebruik van design thinking in een open innovatie wedstrijd verschillende voordelen kan bieden. Met name: een betere definitie van de duurzaamheidsuitdaging, de nieuwe regionale samenwerkingen voor duurzaamheid, en de creatie van een experimentele ruimte waarbij nieuwe oplossingen kunnen worden getest met eindgebruikers en anderen belanghebbenden. Deze bevindingen zijn beschreven in hoofdstuk 6.

In dit promotieonderzoek zijn vier belangrijke manieren geïdentificeerd waarop bestaande organisaties het duurzame ondernemerschapproces kunnen initiëren en handhaven, namelijk:

1. Door leiderschap, met een veranderaar die de duurzaamheidstransitie kan starten en die een netwerk van externe belanghebbenden kan opbouwen die een dergelijke transitie ondersteunen en handhaven (zie hoofdstuk 3);
2. Door middel van identiteitsreflexiviteit, waardoor interne organisatie-identiteiten kunnen worden afgestemd op externe organisatie-eisen (zie hoofdstuk 4);
3. Door een responsieve benadering van duurzaamheid te hanteren in tegenstelling tot een primair proactieve of reactieve houding ten opzichte van milieu- of sociale interventies (zie hoofdstuk 5);

4. Door middel van gezamenlijke innovatie-initiatieven, zoals open innovatie-wedstrijden, die bestaande organisaties helpen bij het herformuleren van het duurzaamheidsprobleem dat ze moeten oplossen, en die de organisatie helpen nieuwe samenwerkingsverbanden op te bouwen (zie hoofdstuk 6).

In de afsluiting van dit proefschrift worden de maatschappelijke en theoretische implicaties van de resultaten benadrukt. Daarnaast worden richtlijnen voor toekomstig onderzoek gegeven.

About the author

Angela Greco is a PhD student in the graduate school of Campus Fryslân, University of Groningen. Originally trained in engineering, Angela has been both a researcher and a consultant in her career. From 2012 till 2014 she co-created Prêt-à-Loger, a sustainable renovation solution for existing houses, winning five awards at the world competition Solar Decathlon 2014. In 2015, she worked as sustainability and innovation engineer for Techniplan Adviseurs, a building consultancy company based in Rotterdam. Over the past years, she has been collaborating with other organizations on sustainable innovation initiatives, including Climate-KIC, Brainfuel and, Centre for Innovation. As part of her research activities she conducted fieldwork for ARTEK (Greenland) for the Natural Energy Efficiency and Sustainability Northern Periphery Programme.

During her visiting period (August-December 2019) at Ivey Business School, Western University in Canada she worked on responsible innovation practices together with Professor Bansal.

Angela volunteered as a member of the committee of representatives of the Energy Community of Young Researchers (part of the New Energy Coalition) in 2018, for which she was the author of the column “meet the PhD candidate”. In 2017 she was a founding member of ION (Italiaanse Onderzoekers in Nederlands), a consortium of Italian researchers in the Netherlands funded in collaboration with the Italian Embassy.

Angela holds a Master of Science in Civil Engineering from the Delft University of Technology, and a Bachelor of Science in Building Engineering from the University of Naples. Additionally, she completed the Honours International Leadership Programme at the University of Leiden, the Netherlands.

Conference Presentations

Identity reflexivity: a framework of heuristics for strategy change in hybrid organizations. AOM (Academy of Management) annual meeting, 2019, Boston, USA: “Broadening our sights”

The Freezing Effect of Sustainability Paradoxes and Conflicting Identities in Hybrid Organizations. AOM (Academy of Management) annual meeting, 2019, Boston, USA: “Broadening our sights”

Experimentation for sustainability through design thinking: the case of the sustainable innovation challenge. EGOS (European Group of Organization Studies) conference, 2019, Edinburgh, Scotland: “Enlightening the Future: The Challenge for Organizations”

When chasing energy neutrality becomes unethical: paradoxes of climate mitigation strategies for social housing. SEE (Sustainability Ethics Entrepreneurship) conference, 2019, Miami, USA

Identity reflexivity and managerial sense-making: facilitating change in sustainable enterprises. RENT (Research in Entrepreneurship and Small Businesses) conference, 2018, Toledo, Spain: “Sustainable entrepreneurship: A win-win strategy for the future”

Organizational inertia for positive social change: Theory and Evidence from a Housing Association. AOM (Academy of Management) annual meeting, 2018, Chicago, USA: “Understanding the inclusive organization”

The paradigm of balancing the triple bottom line in hybrid organisations. EGOS (European Group of Organization Studies) conference, 2018, Tallinn, Estonia: “Surprise in and around Organizations: Journeys to the Unexpected”

Should organizations strive for inertia to achieve positive social change? SEE (Sustainability Ethics Entrepreneurship) conference, 2018, Madrid, Spain

Sustainable entrepreneurship in social housing. IESE-LUISS Conference on Responsibility, Sustainability and Social Entrepreneurship, 2017, Rome, Italy

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