'THE TRANSFORMATION OF CLIMATE-KIC INNOVATION PROJECTS INTO STARTUPS'

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PREFACE

After three years of studying at the Eindhoven University of Technology, this thesis is the last piece of the puzzle to become a 'Master of Science' in the field of Construction Management and Engineering. It is the result of a six month journey for which I had the opportunity to work for ARCADIS on the European Eurbanlab project. This project deals with the challenge to accelerate innovative developments within urban areas to achieve low carbon and sustainable cities. Thanks to Anne-Marie Spierings I had the chance to travel to London, meet a lot of interesting people from all over Europe and improve my skills to give an elevator pitch. Even though the focus of Eurbanlab fits the urban development profile of CME research, I looked at the business development side of this project. It would not have been possible to conduct my thesis outside the regular CME track and within the department of Industrial Engineering & innovation Sciences without the faith of Wim Schaefer and Isabelle Reymen. Thank you for giving me the opportunity to go my own way and giving me the chance to be different than the rest. When performing the data collection for the thesis, it was a struggle for me to deal with the ins and outs of qualitative research. I was born to think in quantitative terms and missed the ability to understand the scientific value of qualitative data. Isabelle saw my struggles and enabled me to capture the value of qualitative data. Thank you for clearing the obstacles on my journey, to keep on motivating and inspiring me and for your free time you sacrificed to help me.

Not only Isabelle supported me, but other staff from the Eindhoven University of technology also deserves to be thanked. Paul Masselink, for food for thought on the complicated informal organization of the KICs. Wim Schaefer and Ingrid Dekkers, for not only supporting me, but also the other CME students. Whenever we feel we are facing troubles within our study, you are there to listen to us and search for opportunities to keep us on the right track.

My family and friends I would like to thank for all their love and support. I am blessed to be surrounded by so many people that make my life awesome. There are some people that I would like to thank more specific because of their presence during the journey of my master thesis. I would like to thank my best friends, the two Dutch girls and the German one; Linda, Saskia and Julia for all our fun adventures and for many more to come! Especially Saskia for undergoing this journey with me and all the laughs and cries about the life during a master's thesis and the expectations of our lives together after it. I want to thank my CME colleagues for giving the master program an extra entertaining dimension. Especially Alexandra for being the best team mate, but also a special friend to keep close in my heart even though she will not always be near. Stefanie I would like to thank for her super motivational conversations and all the small talk as a distraction from our work. Of course, I would also like to thank my loving boyfriend Bob. He was there for me in the ups and downs of the journey and wherever I averted from the right track, he put me back on the rails with his help and advice.

But most of all I would like to thank my parents and my sister for their unconditional love and support. Someone last asked me who the people are that I look up to the most and I realized that these people are you… You are always there for me and motivate me to get the best out of life, so I could grow up to be the person I am today. Thank you!

1 INTRODUCTION

In the 21st century, the globalization processes, liberalization and deregulation have caused the industrial economy to rapidly move towards a global knowledge economy [1]. This economy is characterized by major systemic changes, like a shorter life-cycle for products and services, competitive advantages that are rather short term than long lasting and new forms of global competition [2]. To grow this knowledge economy, create jobs and increase societal living standards, even more knowledge based activities are necessary and there is an urge for innovations that lead to new and improved products [3]. The capacity of a society to innovate is crucial in an increasing knowledge-intensive economy [4].

The European society is facing challenges to change the mind-set towards promoting an innovative and entrepreneurial culture, since it lags behind in comparison with other continents [5]. A more entrepreneurial mindset can increase sustainable growth and European global competitiveness, as well as reinforce the innovation capacity of the European member states to bring new-technology based innovations to the market across country boundaries. To stimulate this, the European Union has set up the European Institute of innovation and Technology (EIT) in 2008. This young organization is funded by the European Union and brings together leading knowledge institutes, businesses, engineering schools, public parties, etc. from all over Europe. The EIT is focused on bridging the gap between having ideas and actual business creation.

For this purpose, the EIT provides funding to Knowledge and innovation Communities (KICs). These are the operational parts of the EIT and they are focused on key areas of societal needs. At the moment there are three KICs that work on climate change mitigation (Climate-KIC), renewable energy (KIC Innoenergy) and the next generation of information and communication technology (EIT ICT Labs) [6]. The KICs are organized as separate legal entities with physical locations all over Europe, where the individuals from the universities, research centers and businesses can work together on one of these three societal areas. Each of these KICs integrates education and entrepreneurship with research and business on a EU level. In this way the involved partners work together to perform a wide range of activities to cover the entire innovation chain and deliver disruptive innovations. This includes business acceleration to form startups, education programs for students, training sessions to enhance entrepreneurial skills and innovation projects [7][8][9]. The innovation projects are conducted by a consortium of research and business partners that work together for a limited amount of time to develop new products and services and launch these to the market [4][10].

1.1 Problem definition

Collaboration between research and industry faces enormous challenges. Despite considerable government financing and support, the development of such partnerships has proven to be difficult and does not always lead to products or services that are necessary to grow the global knowledge economy [11][12]. There is an increasing interest in Europe to fund the collaborations between knowledge institutes and business to create innovations. Research has shown that these types of funding have a positive effect on the commercialization outcome [13]. However how this European funding organizations improve the rate of commercialization is unknown [14].

The innovation projects from the KICs also bring together knowledge institutes and business and they are funded by the EIT. If the funding from the EIT stops at the end of these projects, it is possible that these projects land 'on the shelf' without reaching the commercialization goal [15]. A sustainable solution is therefore needed to ensure that at the end of an innovation project the developed innovation is brought to the market. Climate-KIC has acknowledged the opportunity to transform these projects into startups as a possible solution [15].

One of the innovation projects from Climate-KIC that ends in 2014 and has the ambition to be transformed into a startup to reach the commercialization goal is Eurbanlab. This innovation project deals with the challenge to accelerate innovative developments within urban areas to achieve low carbon, sustainable and resilient cities [16]. Eurbanlab signaled there is a lack of attention on business models for research and industry collaboration in literature and therefore requested the design of a business model for Climate-KIC innovation projects. This model should have a positive influence on the transformation of innovation projects into startups.

The main topics of this thesis are the design of an appropriate business model for Climate-KIC innovation projects, together with the transformation of Climate-KIC innovation projects into startups, as a solution for the current commercialization issues of the innovation projects.

1.1 Goal of the research

The goal of this research is to examine how the Climate-KIC regulation can influence the commercialization of new products and services in the innovation projects. More specific is examined what the opportunities for Climate-KIC are to enhance the transformation from innovation projects into startups. According to the Climate-KIC business plan of 2014, past experience has learnt that transforming innovation projects into startups remains a challenge in the area of climate change and for this the business model that leads to commercial application and success should receive more attention [15].

Business models are the key to the success of a startup and the search for an appropriate business model for business and industry collaboration to commercialize innovations is a key challenge for which little empirical research is done, as also signaled by Eurbanlab [17][18][19].

Therefore a second goal of this research is develop an appropriate business model template for Climate-KIC innovation projects in a way that it also has a positive influence on the transformation of innovation projects into startups. To assess the practical use of the designed business model template, it is evaluated with the Eurbanlab innovation project and an implementation plan for this business model in the Climate-KIC organization is described.

1.2 Research questions

To reach the goals of this research to determine how the Climate-KIC regulation can influence the transformation from innovation projects into startups and to design a business model template for Climate-KIC innovation projects, the following research questions need to be answered:

- → How does the Climate-KIC regulation influence the transformation from Climate-KIC innovation projects into startups?
- → What is an appropriate business model template for Climate-KIC innovation projects that also has a positive influence on the transformation of innovation projects into startups?

1.3 Reading guide

This research starts with a comprehensive literature study on technology commercialization and business models. First, the commercialization of technology in research and business collaboration is analyzed to determine the conflicts that arise in these forms of partnerships and how they can be resolved from a theoretical point of view. Next, the term business model is analyzed and how they are successful for startups to form the base of an appropriate business model template for business and industry collaboration in innovation projects. The following chapter discusses the research design and methodology. In this thesis a case study research is conducted for which the data collection is based on semi-structured interviews and publicly available formal Climate-KIC documents. The next chapter analyzes the collected data to formulate opportunities for the Climate-KIC regulation in the transformation from innovation project into startups. This analysis is used in the following chapter to design a business model template for Climate-KIC innovation projects. The practical use of this template is tested with the Eurbanlab innovation projects and guidelines for the implementation of this business model template in the Climate-KIC organization are further elaborated. This research ends with a chapter that presents the conclusions and a discussion. A more detailed flow chart for this research is visualized in **Error! Reference source not found.**.

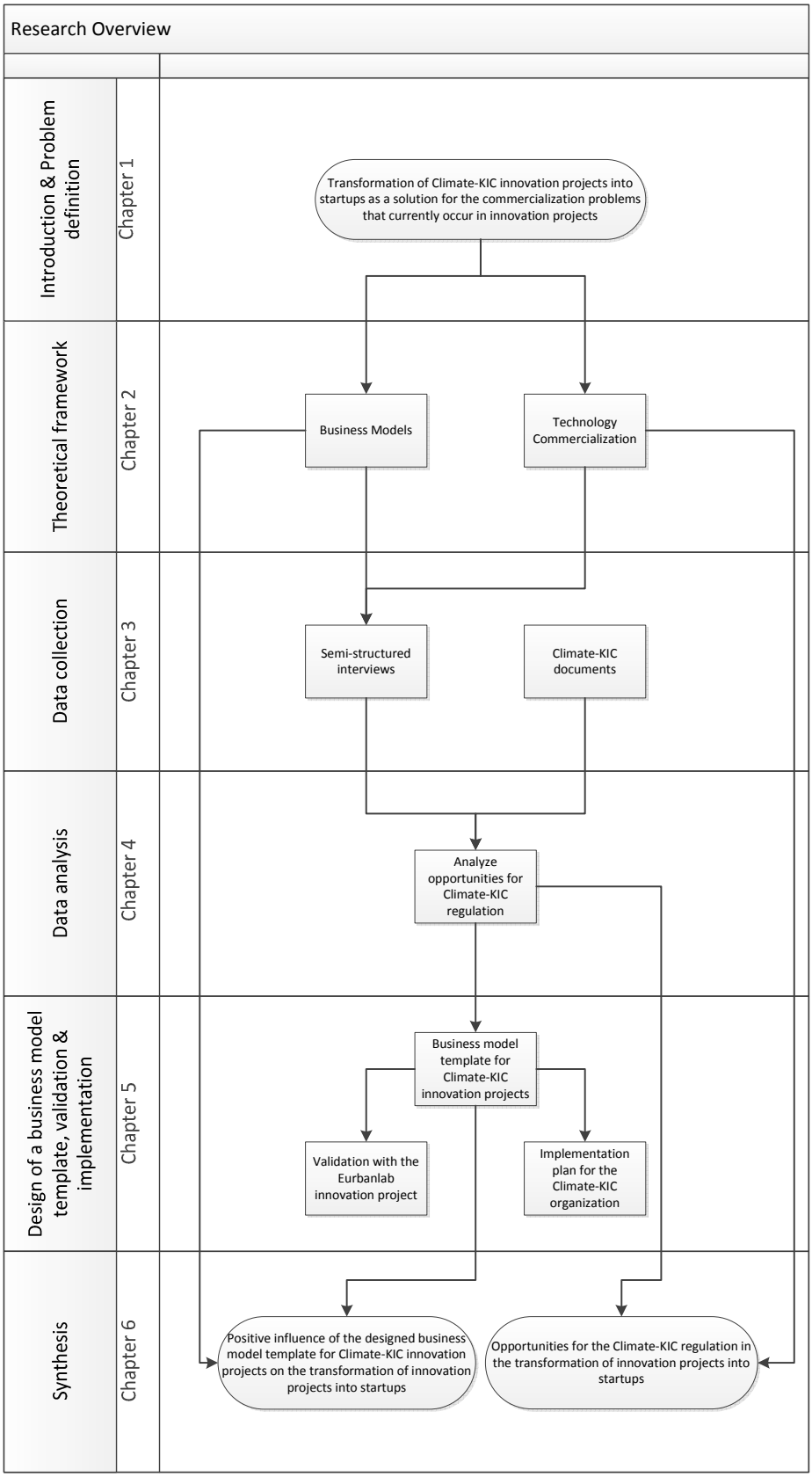


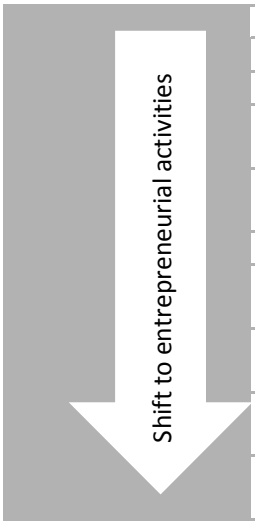
FIGURE 1 RESEARCH OVERVIEW

2 THEORETICAL FRAMEWORK

This chapter outlines the theoretical framework of this research. Since this thesis is focused on the innovation projects that are a form of research and industry collaboration, first the commercialization of technology in research and business collaboration is analyzed. The problems that arise in these forms of partnerships are discussed, as well as how they can be resolved from a theoretical point of view. Not only for startups, but also for commercialization of technology in these types of collaboration, a business model is a key success factor. This research analyzes what the term business model means, in which design form it is currently used in the Climate-KIC innovation projects and what the characteristics of a good business model are. This chapter ends with conclusions on how technology commercialization and business models relate to Climate-KIC innovation projects.

2.1 TECHNOLOGY COMMERCIALIZATION

Technology commercialization is the process of translating research knowledge into new or improved products or services that are introduced into the market, with the goal to generate economic benefits [20]. The global knowledge economy is characterized by fast technological change, high innovation speed, shortening product life cycles and increasing complexity of products. This has caused knowledge and research to become the center of the economy [21][22]. Knowledge institutes are therefore also changing their position in technology commercialization and are no longer only focused on the traditional knowledge transfer through education and basic research, but also show more interest in entrepreneurial activities to contribute to economic development [23]. This shift towards more entrepreneurial activities is visualized in figure 2 [24].



Activities	Description
Education	Producing high qualified graduate students
Academic results	Publications of books, articles, etc.
Grantsmanship	Obtain large-scale external research grants for research
Consulting	Selling academic expertise to external organizations to solve practical problems
Industry training courses	Teaching students from industry
Contract research	Undertaking specific research projects with industry
Patenting and licensing	Licensing intellectual property rights on discoveries and know-how
Venture creation	The creation of a firm base on the developed knowledge
Creation of a technology park	Location for high-tech business in contact with knowledge institutes

FIGURE 2 ENTREPRENEURIAL ACTIVITIES OF KNOWLEDGE INSTITUTES [24]

Despite the increase in entrepreneurial activities from knowledge institutes, inventions arising from these activities are rarely immediately ready to be converted into commercial products and services [19]. This is a difficult proces that consists out of a number of activities, being technology development, product development and business development [25]. Technology development improves the performance, usability and other technological characteristics. Product development involves the transformation of these technologies into a product and service that can be launched to the market and fits the customer needs. Business development is about other capabilities that are needed to develop, produce and sell the technology based products or services. Since the transformation to commercial products and services needs significant investment, development and market expertise, a collaboration between knowledge institutes and the industry can facilitate the commercialization of technology [26].

This collaboration can take several forms, like for instance research contracts, know-how and patents under license, consulting and new venture creation [27]. The projects that show cooperative research, rather than licensing the technology are most important for the knowledge transfer [28]. These forms of collaboration are not very obvious; since both knowledge institutes and firms need to learn to cross their organizational boundaries and build the capabilities to work with partners with a different incentive system [29]. The project management is for both parties different; for firms the financial performance for a project is higher when it is managed in a formal and structured way, and is negatively associated with loosely managed projects [30]. For knowledge institutes this is the other way around, giving these projects an extra challenging dimension.

Both parties also have different goals and incentives for cooperation [31], which could lead to conflicts and can make the collaboration possibilities harder. The first difference lies in the willingness to corporate on a certain technology topic. Knowledge institute partners want to work on topics that are perceived by their peers to be interesting and valuable, while firms like to choose topics that are perceived as being valuable for developing new products and services for their customers [32]. Second, knowledge institutes are keen on disclosure of information to get acknowledgement of their peers and private firms wish to control resources that are not available for the competition [29]. The primary interest for knowledge institute partners is to create additional research funding and to test practical applications of the developed knowledge. For the industry it is more to know how to solve technical problems and capture valuable knowledge to create a competitive advantage. A third point is that over the past few years knowledge institutes have increased their efforts in capturing intellectual property in forming patents to create commercial opportunities [25]. In some cases knowledge institutes have unrealistic expectations about the commercial potential of their research, causing them to over valuate their intellectual property [33]. These differences cause conflict situations and a difference in collaboration expectations on what the desired outcomes are. These conflicts make that in comparison with other new-technology based firms, knowledge institute spin-offs have a lower likelihood to generate profits and lower growth in terms of sales, when compared with independent startups [34].

There are some ways to improve these conflict situations. Most of them are based on choosing the right partnership [35], but also partner diversity (which has a large effect on the innovation novelty degree), environmental factors and project management lays an important role [36][37]. An example of a critical determinant for the success or failure for these type of alliances, is collaborative experience [38]. If there is already experience in the collaboration process, standard protocols are used as a starting point for negotiations on intellectual property ownership. This creates acceptable rules for allocation of patent rights to secure the good-will of partners, making it easier to set up an effective new research collaboration [39]. Another opportunity that could limit these conflict situations is the involvement in a variety of collaboration channels [29]. While being involved in a broad range of interaction channels, such as face to face meetings and informal interactions and not only formal agreements, the capacity to balance and align the different incentive systems is higher. However, this variety of interactions should be monitored carefully and could have a negative downside if there are too many different people within the firm or knowledge institute interacting with each other. The open science channels (publication, public meetings and conferences) that are used by both actors to exchange knowledge and the openness to the external environment from firms are also crucial [40][41].

A last key issue in the collaboration between knowledge institutes and firms, is trust. Trust allows partners to believe that they will treat each other fairly and will help to resolve potential problems. It is impossible to predict on forehand what the implications of disclosure and commercialization of the research implies, as high levels of uncertainty are involved with research. Trust reduces the fear that one of the partners will act opportunistically by taking advantage from potential benefits [42].

When making policies of collaborating, both the knowledge institutes and businesses need to create incentives for both actors to cooperate. Current policies are mainly made up to create incentives for collaboration, with no acknowledgement that in the absence of a market demand, little will be achieved. It is therefore important to address an innovation that fits the market [41].

Publicly funded research programs could offer a solution to the challenges that these types of collaborations currently face [13]. These research programs should bring together key partners to create innovations that address predefined market demands. Together with a framework for regulations on developed intellectual property rights and project management, publicly funded research projects could increase the commercialization of technology. In this way the EIT and the KICs offer a good platform to support the creation of new products and services.

2.2 Business models

In order to increase the commercialization success of research and industry collaboration, an appropriate business model is needed [17][18][19]. It is therefore important to understand what a business model is, how business models can be designed with a template for practical implications and how business models can be successful.

2.2.1 WHAT IS A BUSINESS MODEL?

Research has shown that business models are the key to the success of a business [18][17][43]. These business model concepts typically capture the sources of costs and revenues together with descriptions of the products, services, market participants and the value chain position with the customers' and suppliers' benefits [44]. However, the theoretical foundations of the business model concept still display some inconsistencies in the underlying assumptions [45] and the term 'business model' has been used for many different terms from management literature [46][47]. To illustrate this, a couple of understandings of business models are given below.

Amit & Zott (2001), Osterwalder & Peigner (2010), Blank & Dorf (2012), Chesbrough (2010) and Teece (2013) follow the same line in describing a business model [48][50][51][52]. Amit & Zott (2001) defined the business model as depicting *'the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities'.* According to Osterwalder & Peigner (2010), '*a business model describes the rationale of how an organization creates, delivers and captures value'*. Blank & Dorf (2012) add to this that the customers have an important impact on this business model, since no business model survives the first contact with customers. Chesbrough (2010) describes that a business model fulfills the following functions: it articulates the value created for users, it identifies a market segment and revenue generation mechanism, it estimates the cost structure and profit potential, it describes the position of the firm within the value chain of linking customers and suppliers and it formulates a competitive strategy. He also argues that *'a mediocre technology pursued within a great business model may be more valuable that a great technology exploited via a mediocre business model'*. Teece (2013) describes a good business model as one that *'yields value propositions that are compelling to customers, achieves advantageous cost and risk structures, and enables significant value capture by the business that generates and delivers products and services'.*

Afuah (2004) however describes a business model as *'a framework for making money and the set of activities which a firm performs, how it performs them and when it performs them'* [43].

Another point of view is given by Morris et al. (2005) who claim that '*the business model is related to a number of other managerial concepts. It captures key components of a business plan, but the plan deals with a number of startup and operational issues that transcend the model. It is not a strategy but includes a number of strategy elements. Similarly, it is not an activity set, although activity sets support each element of a model'* [18].

A central focal point in these definitions is the attempt to define business models as a term within the business' strategy [53].

2.2.2 SUCCESSFUL BUSINESS MODELS

In order to create a successful business model, it is important that the business model serves an appropriate fit between the invention, inventor and commercializing organization [19].

A successful business model should be sustainable and thus achieve a 'sustained value creation' [45]. Sustained value creation relies on the continuously successfully shaping, adapting and renewing the underlying business model that comprises the rationale of how an organization creates, delivers, and captures value [48]. This is done according to the environment of the business model, which is subject to trends, market forces, industry forces and macro-economic forces that are visualized in figure 3. Knowing the environment of the organization helps to sharpen the sustained value creation and thus creates stronger and more competitive business models [48]. The greater the total sustained value created for all involved parties, the bigger the bargaining power of the focal firm and the more value it can generate [52]. Organizations that achieve this sustained value creation display a profitable growth over a long period of time, are highly entrepreneurial and keep on searching for new business opportunities [45].

Three strategizing actions that are all together relevant for value creation are: the focus on organic growth together with strategic acquisitions, the simultaneous expansion along different dimensions (new customer segments, distribution channels, markets, etc.) and the combination of cost-efficiency with a high-quality focus. For these actions, a balanced way of using resources, a strong organizational culture with active and clear leadership and employee commitment are necessary. This is challenging since the number of potential activities is often quite large and a good solution for this problem could be aggregation of different levels of activities [52].

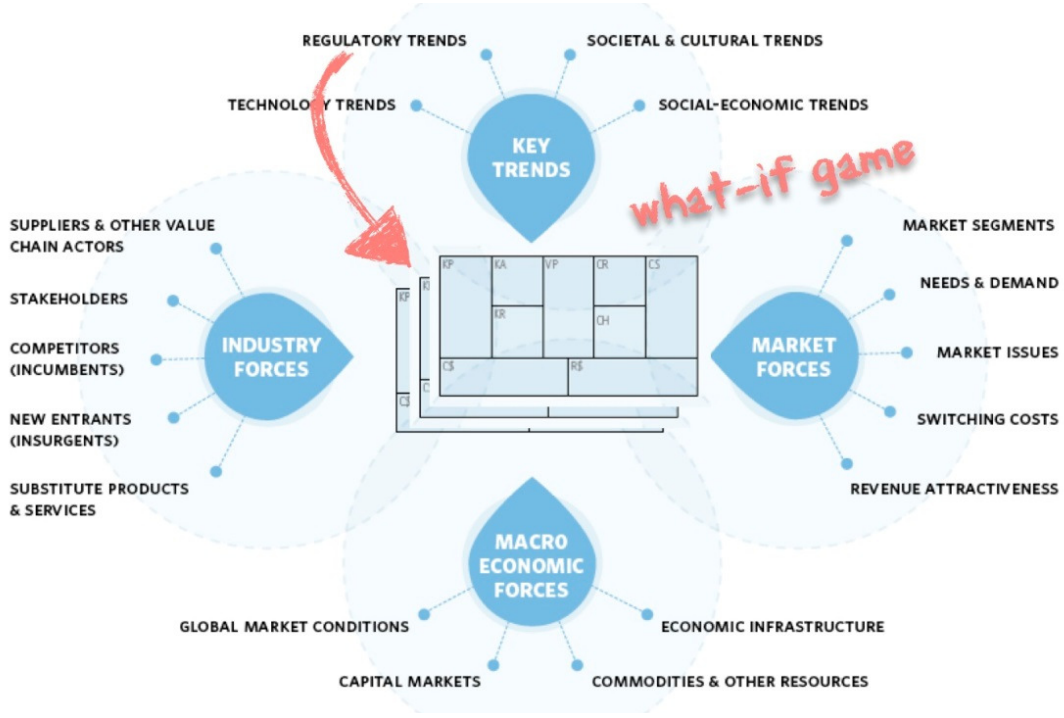


FIGURE 3 BUSINESS MODEL ENVIRONMENT [48]

There is also a very practical dimension of this sustained value creation for making a successful business model. Some companies use the exact same model as others, but are not successful. So what is the key in making these business models successful?

Sinek (2011) found out that all inspiring companies think, act and communicate in the same way, which is the complete opposite of everyone else [54]. The 'Golden Circle', visible in figure 4, illustrates this very well.

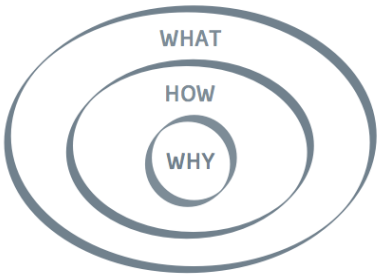


FIGURE 4 THE GOLDEN CIRCLE [54]

Average organizations know very well *what* they sell (product specifications etc.), some of them also know *how* they sell it, but almost all have no clue *why* they sell it. Making profits is not a *why*, it is a result of it. The *why* part is the reason of existence for the organization, it is the core to success. Working from the outside of the circle to the middle, they tap the neocortex part of the brain of potential customers, controlling their rational thoughts. Customers will buy it if they need it, but not because they want it. Inspiring organizations however work the circle inside out; they know very well *why* they do what they do, clear it out and take action with the *how* and proof it with the *what*. In this way they tap the limbic part of the brain of potential customers, which influences feelings, behavior and decision making. If the customers believe what the organization believes, they will be loyal and buy the product. Since they share the same vision, they want to be part of the community. A great example from a company that knows very well why they do something is Apple. They have a clear vision and people want to have an Apple, just to be part of the Apple experience [54].

2.2.3 BUSINESS MODEL DESIGN

Once a design of this business model is set, it is difficult to change due to inertia and resistance of change of the involved parties [52]. It is therefore important to use an appropriate business model template at the start of a project that fits within the strategy of the organization.

To capture, visualize and understand the organization logic in an easy and structured way, business model concepts are designed [48]. Examples are the 'Board of innovation Model' [55], the lean canvas [56] and the 'Osterwalder business model canvas' of Alexander Osterwalder (2010) [48].

In this research the business model perspective is examined with the 'Osterwalder business model canvas', due to the practicality and clearness of the model and the fact that this model is used within Climate-KIC to discover business opportunities for innovation projects [57].

2.2.4 THE OSTERWALDER BUSINESS MODEL CANVAS

The Osterwalder business model canvas is visualized in figure 5 and consists of nine different building blocks; the value proposition, customer segments, channels, customer relationships, revenue streams, key resources, key partners, key activities and cost structure [48][49]. These different building blocks are explained in table 1.

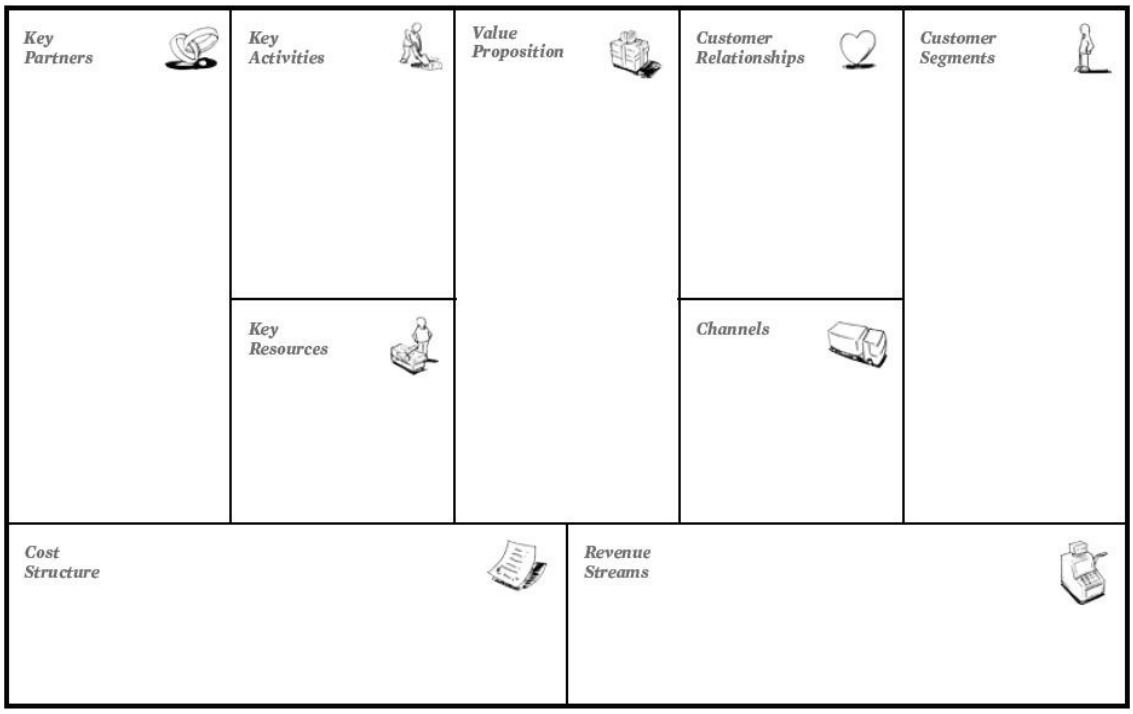


FIGURE 5 OSTERWALDER BUSINESS MODEL CANVAS [48]

TABLE 1 BUILDING BLOCKS OF THE OSTERWALDER BUSINESS MODEL

Building blocks	Explanation
Value proposition	The value proposition identifies the design, price, cost reduction, risk reduction, accessibility and convenience when using or buying the product or service [48][49]. It describes the product in a way that customers are satisfied with the product and that it creates value for them. It is important to know what the product or service does, what the pains and gains for the customers are and to know if the product is Product-Market fit and thus solves one of the customers' most pressing problems or needs. The creation of a value proposition is challenging when the business model addresses a new market. It is not known if there are really customers for the developed products and services and thinking in terms of solving the customers problem, it is interesting to know why competitors did not already address it and why the problem is so hard to solve [48][49].

Customer segments	The center of all business models are the customers. To satisfy their needs, a business first needs to know their potential customers and have a grip on their social, financial and geographical situation. It is important to discover who they are and what their daily routine is, where the business' product fits in and what would really make their life easier. With all this information, customer archetypes can be created that are grouped according to common behavior, wishes, type of relationship, channels, profitability and other attributes. It is then possible to decide which customer archetypes form the focus groups and which ones to ignore. When defining these archetypes, it is important to keep in mind that the people that use the products are not always the ones that buy them; in companies there are financial managers and acquisition managers, or in family situations when children like something, mostly the parents are paying [48][49].
Channels	Channels have the purpose to create awareness of the product or service among the customers, can handle evaluation on the delivered value and are a mean for purchasing and delivering the product or service and handles after sales services. It is important to think about how these channels are used in the most cost efficient way and how they are integrated in customer routines. This can be done by direct transport, a website, mobile services, clouds, etc. [48][49].
Customer relationships	Customer relationships can be identified in different ways for specific customer segments. This can be for example personal assistance, self-service, automated services, communities to help solve each other's problems and co-creation, which consist of creating value together with the customers (e.g. YouTube). The first step is getting customers through the different channels described above. The next step is keeping and growing customers, since this is cheaper than attracting new customers. Creating customer relationships is the result of complex interactions between customers, channels, value proposition and marketing budget and can lead to a repeatable, scalable and profitable business model [48][49].
Revenue streams	The revenue streams determine the strategy a business uses to generate cash from each customer segment. There are several ways to generate these revenue streams from asset sale, usage fees, subscription fees, lending/renting/leasing, licensing, brokerage fees to advertising, etc. It is important to find out through customer contact what the customer actually wants to pay for, how much they want to pay for it and how they are going to pay for it [48][49].
Key partners	For determining the key partners it is necessary to know what the partners deliver and what the business has to do in return. The advantages of partnerships can be performing activities on a higher economic scale to reduce costs, risk reducing in a competitive environment or acquisition of certain resources and activities.

	Partnerships can consist of strategic alliances, coopetition (strategic partnerships between competitors), joint ventures or buyer-supplier relationships to assure reliable supplies [48][49].
Key resources	The key resources are meant to create value for the customer. They are key assets for business operation and can be physical, intellectual, human or financial resources [48][49].
Key activities	The key activities consist of the actions to keep the business model running and to execute the value proposition. Examples are: production, problem solving, consultancy or networking [48][49].
Cost structure	This building block represents the costs for running the business. There are two broad categories of cost structures of business models; cost-driven business models and value-driven business models. Cost-driven business models focus on minimizing costs wherever possible. Value-driven models focus on value creation [48][49].

Since it is difficult to change a business model once it is set, it is essential that it fits the created invention and commercializing organization, in order to achieve a sustained value creation. It is hard to change the business model later on, due to inertia and resistance of the involved parties [52]. When identifying the main three factors of interest for the design of a business model, the content, structure and governance are crucial [58]. The content reflects the selection of activities within the project. The structure describes how these activities are linked together and governance reflects on which parties lead the activities. The Osterwalder business model canvas is suited to capture these three factors for startups. The canvas is also used for innovation projects, however due to the complex nature of the governance structure of these projects and the heterogeneous partnerships, this canvas might not the basis of an appropriate business model template.

2.3 Conclusion

Publicly funded research programs can bring together key partners to create innovations that address predefined market demands. If these programs are supported by a framework for regulations on intellectual property rights and project management, they could offer a solution for the challenges that research and business collaboration are currently facing in the commercialization of new products and services. In this way the Climate-KIC innovation projects offer a platform that can increase the success of technology commercialization. For this purpose a suitable business model template is needed to achieve a sustained value creation of the innovation projects. Due to the complex nature of the governance structure of these projects and the heterogeneous partnerships, the Osterwalder business model canvas that is currently used by Climate-KIC might not the basis of an appropriate business model template.

3 RESEARCH DESIGN AND METHODOLOGY

This chapter firstly explains the case study research that is performed and how the necessary data is collected and analyzed. Subsequently is discussed how a business model template is designed based on the results of the data analysis and how this template is validated. To implement this business model template in the Climate-KIC organization an implementation plan is required, which is further elaborated. This chapter ends with the quality of the research and the conclusions of the research design and methodology. An overview of the research design is visualized in figure 6.

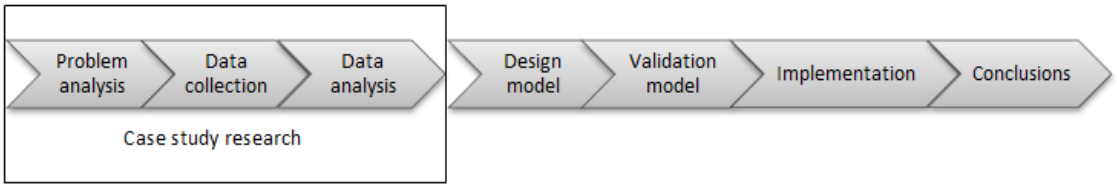


FIGURE 6 RESEARCH OUTLINE

3.1 CASE STUDY RESEARCH

The innovation projects from Climate-KIC form a funded collaboration between knowledge institutes and business and face challenges in creating products or services that can be launched to the market. If the funding stops at the end of these projects, it is possible that these projects land 'on the shelf' without reaching the commercialization goal [15]. A sustainable solution is therefore needed to ensure that at the end of an innovation project, the developed innovations can be commercialized. Climate-KIC has acknowledged the opportunities to transform these projects into startups as a possible solution [15]. The transformation of Climate-KIC innovation projects into startups and the influence of Climate-KIC regulation are therefore examined in this research.

This research is exploratory, since it is initial research to get familiarized with the concept of the transformation from Climate-KIC innovation projects into startups [59]. This research looks for patterns and key issues in the collected data to give insight in the transformation.

Case study research is chosen since this type of research is an empirical investigation of a contemporary phenomenon in a real-life situation over which no external control can be exercised. It has a focus on organizational and managerial issues [60], has the ability to deal with a full variety of data (documents, interviews, etc.) and addresses 'how' or 'why' questions [61][62][63].

The transformation of Climate-KIC innovation projects into startups is a phenomenon that fits the profile of case study research. The units of analysis for this case study research are the innovation projects from the three KICs.

Since there are three KICs this is a multiple case study research, however only the case of the innovation projects from Climate-KIC are examined more in depth within the scope of this research. The business model template that is created with the results of the analysis, is tested and validated with a specific Climate-KIC innovation project, namely Eurbanlab. This innovation project is seen as a case within the case study research.

3.1.1 DATA COLLECTION

The data that is collected for this research has a qualitative nature. This is because this type of data gains insight on how key persons perceive the current transformation possibilities from innovation projects into startups and to discover problems they experience in this transformation. The strength of qualitative research lays in the fact that it focusses on naturally occurring events, so it gives a good reflection of the real world [64].

There are six types of evidence that can be collected for case study research, namely documents, archival records, interviews, direct observations, participant observation and physical artefacts [62]. The use of multiple sources of data allows triangulation to improve construct validity [65]. The data that is collected is stored in a case study database and the data that is used in this research consists of interviews, documents, archival data and participant observation. The interviews and documents are used for the case study analysis and the archival records and participant observation data are used for the validation of the constructed business model template.

3.1.1.1 INTERVIEWS

The primary data collection for this research is done by conducting interviews with innovation project managers, entrepreneurs from startups and business developers from the three KICs to gain insight on how they perceive the current transformation possibilities from innovation projects into startups and to discover problems they experience in this transformation. In order to do this, semi-structured interviews are carried out. These types of interviews are structured with an interview guide to secure that all necessary topics are covered [65]. However, they also allow the respondent to ask questions or bring up new sub-topics that can change the direction of the interview. In this way every interview can be slightly different.

The questions that are posed are open-ended questions, as proposed in the interview guide, but can also be questions that naturally occur during the interview to deepen out certain statements made by the respondent. This makes these type of interviews feel like a conversation.

Only one round of interviews is held, meaning that the respondents were only interviewed once. All the interviews were conducted one-on-one and scheduled for 45 minutes till one hour. They started with a short introduction about the purpose of this research. Before the interview started, the participants were informed that the interview would be audio recorded to capture all the information to use later on in the data analysis, but they were assured that this information would not be made traceable to their names.

In this way, also the sensitive issues around this research could come to the surface and not only shallow information was gained.

The interview participants were selected with purposive sampling, based on specified criteria [65]. In this interview the first criterion to select the participants was that they needed to be involved in one of the three KICs.

For the second criterion three different groups were made. The first group of people represents the managers of innovation projects. This is to identify how they perceive the transformation into a startup for the project they are working on and to discover possible problems and opportunities for this transformation, as well as the usage of a business model. The second group of people is formed by the entrepreneurs of KIC startups. These people are interviewed to analyze how they perceive a startup, what the problems are that they are facing and how they use a business model. The third group of people is an expert group and they are the business developers for the KICs. They provide professional insight on the possibilities of transforming innovation projects into startups and the use of a business model.

There is chosen to interview these three groups of people to get insight on the transformation of KIC innovation projects into startups from a business model perspective and to analyze which factors lead to a successful transformation. The questions of the interviews all addressed the topic *'How to create successful business models for startups following upon KIC innovation projects?'.*

Each of these groups was interviewed based on a different interview guide about the same topic, but based on their background. Innovation project managers were only asked about innovation projects, the entrepreneurs of a startup were asked about startups and business development managers about both. The interview guides for each of these groups can be seen in *Appendix Interview Guide*.

The appropriate size of the amount of interviews is normally based on purposive sampling, which is determined based on saturation. This means that the optimal amount of interviews is reached when an extra interview does not reveal new information [66]. Within the scope of this research, it was possible to conduct the interviews that are visualized in table 2. There has been tried to interview respondents of innovation projects, startups and business development within the three KIC cases. In total nine interviews are conducted, from which only eight interviews are recorded and transcribed. One interview within EIT ICT Labs could not be recorded and was therefore only used to check if saturation was reached.

The total amount of interviews is not sufficient to fully reach saturation, however saturation is approached, since the last interviews from each group contained few new information, the respondents were interviewed for almost an hour in a semi-structured way and provided high quality information [67].

TABLE 2 CONDUCTED INTERVIEWS

	Climate-KIC	KIC Innoenergy	EIT ICT Labs	Total
Innovation project	2	1		3
Startup	2		1*	3
Business development		1	2	3

3.1.1.2 DOCUMENTS

The second form of data consists out of documents. The documents that are collected are publically available online and can be retrieved via the websites of Climate-KIC, the EIT, the EU, the European Commission and the European Parliament. An overview of the used documents is visualized in table 3. The data source for these documents gives an objective reflection that can be supported or undermined with the data provided by the interviews. These documents should be used with care, since they can be written with another purpose than what they are used for [65].

TABLE 3 DOCUMENTS

Source	Document
Climate-KIC (2011)	Association Climate-KIC By-laws
Climate-KIC (2014)	Business Plan 2014
Climate-KIC (2013)	Climate-KIC Template Consortium Agreement Guidance Notes
Climate-KIC (2012)	Climate-KIC Consortium Agreement
Climate-KIC (2014)	Climate-KIC innovation A Manual for developing and implementing innovation and Pathfinder projects
Climate-KIC (2011)	Climate-KIC Internal Agreement
Climate-KIC (2014)	Innovation Pillar project Quality Assurance Processes
Climate-KIC (2014)	Professional Education
EIT (2014)	EIT financial guide
EIT (2012)	EIT Glossary Framework Partnership Agreement
EIT (2014)	Principles for financing , monitoring and evaluating KIC activities The EIT – a results-oriented and impact driven Institute
EIT (2014)	The EIT fostering innovation and entrepreneurship across Europe
EIT (2009)	The European Institute of innovation and Technology Call for proposals EIT-KICS-2009 – Knowledge and innovation Communities
EU (2013)	DECISION No 1312/2013/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 on the Strategic innovation Agenda of the European Institute of innovation and Technology (EIT): the contribution of the EIT to a more innovative Europe. Official Journal of the European Union, 347, pp.892–923
EU (2008)	REGULATION (EC) No 294/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 March 2008 establishing the European Institute of innovation and Technology. Official Journal of the European Union, 97, pp.1–12
European Commission (2009)	European Institute of innovation and Technology (EIT) launches the first three Knowledge and innovation Communities (KICs). IP/09/1950, IP/09/1950(December), pp.1–5

European Commission (2013)	Study on the policy of the European Institute of innovation and Technology (EIT) and its Knowledge and innovation Communities (KICs) regarding Intellectual Property Rights Executive Summary
European Parliament (2012)	The Role of Knowledge and innovation Communities in the EU Research and innovation Landscape

3.1.2 DATA ANALYSIS

After the data is collected, the data analysis can start. To perform data analysis for qualitative research, a grounded theory approach or a template approach can be used [68]. A grounded theory approach can develop theory out of raw qualitative data and is used to explore unfamiliar territory in a structured way. Template approach utilizes existing theories and concepts to turn qualitative data into theory. Since this case study research only uses the raw interview data and documents to perform the analysis and the explored territory is unknown, a grounded theory approach is adopted.

The first step in this qualitative data analysis is the transcription of the tape recordings from the interviews. The next part of the data analysis exists of coding the interviews. This is the process of generating codes to describe certain passages or relevant features in the interviews [69]. In this research the computer program Nvivo10 is used for this purpose, since it is a program developed to analyze all forms of unstructured data.

The grounded theory approach has three central coding procedures that are sequentially used in this research, being open coding, theoretical coding and selective coding. The interviews are read over and over again to perform the different coding procedures. First open coding is deployed, which is a form of coding without an existing coding scheme and is used to categorize and label certain phenomenon. The codes are being developed during the open coding process. Next, theoretical coding is used and consists of discovering relationships between different contexts, variables, patterns and distinct differences [64]. A list of the codes as an outcome of the open en theoretical coding procedures is visualized in *Appendix Open and theoretical coding*. In this table the different names of the codes are stated, in how many of the eight interviews they can be found and how many times the codes appear in the references.

Last, selective coding is done which is used to elaborate the relationships and concepts that are found during open coding and theoretical coding. These are used to organize, compress and assemble the data in a way that it permits conclusion drawing. In this research the processed data from the interviews is displayed in tables in the *Appendices Climate-KIC partnerships, funding for innovation projects, lifetime of innovation projects, intellectual property rights, support from climate-KIC, business model, customer involvement, team, market and entrepreneur.*

These tables are based on the data of the respondents from all the KICs, but are used to focus on the regulations of the Climate-KIC organization. These organizations are not completely the same, but they do have a lot of similarities. Therefore it is valid to use this data to analyze the regulations of Climate-KIC. If the collected data is not applicable for Climate-KIC, this will be stated in the analysis.

If no statements are made, there is checked if the information that is given by the respondents of the other KICs is also applicable for Climate-KIC.

The data deducted from the interviews is combined with the Climate-KIC documents and documents from European institutes to analyze the influence of Climate-KIC regulation on the transformation of Climate-KIC innovation projects into startups.

3.2 DESIGN

The results of the case study analysis lead to the design of a business model template for Climate-KIC innovation projects.

A general model for a design process is:

1. Problem analysis
2. Specifying design requirements
3. Choosing a solution concept
4. Making the outline design by determining the design parameters
5. Making the detail design

1. The problem is that there is a lack of appropriate business models for business and industry collaboration in literature, as signaled by Eurbanlab. There is a request from Eurbanlab to design a business model for Climate-KIC innovation projects within the scope of this research.

2. The design requirements are an important part of the solution. They are mostly obvious, however they should not be overlooked since they can lead to problems for the justification of the solution [68]. In this research the solution is constructed in a way that it complies with the following requirements:

a) ***Functional requirements:*** *the solution should solve the problem, which in this research consists out of the development of a business model template for Climate-KIC innovation projects*
b) ***User requirements:*** *the people that need to use the solution should have the competences for using it, which are in this case the partners from the Climate-KIC innovation projects*
c) ***Boundary conditions:*** *the solution must comply with legal requirements and fit in the culture of the organization, which is in this case Climate-KIC*
d) ***Design restrictions:*** *the time for realizing the solution is limited, which is in this case the scope of this master's thesis*

3. The solution concept is a redesign of the Osterwalder business model canvas as a starting point for the solution, in order to design a variant that is more suitable to solve the business problem.

4. The parameters that are included in the design come from three sources: the case study analysis, the semi-structured interviews conducted for this research and literature.

The analysis of the case study research is a first important source of ideas, since the analysis diagnoses the problems in the Climate-KIC regulation that currently hinder the transformation of Climate-KIC innovation projects into startups. However, the designed solution cannot be logically deduced from the diagnosis [70]. Second data sources for the parameter determination are the semi-structured interviews that are conducted. This is because these interviews do not only address the Climate-KIC regulation, but are also set up to analyze the business model perspective. A last source of determining and checking the necessary parameters for the solution design is based on literature.

5. The solution design leads to a business model template for Climate-KIC innovation projects.

The last phase in the design process is justification in terms of operational improvements to explain why the realization of the solution solves the problem.

3.3 Validation of the design

The Eurbanlab case is used to test and validate the practical implications of the designed business model template. Eurbanlab is an innovation project, which will be terminated at the end of 2014, but has the ambition to be transformed into a startup and is therefore suited to test the designed business model template. The validation is done by analyzing if this business model template could have averted the problems Eurbanlab is facing in transforming into a startup.

To test the business model template, data from Eurbanlab is needed to fill in the template. The data that is collected for this purpose is obtained by archival records and participant observation. The archival documents were the Eurbanlab business plan, communication plans, minutes, etc. These documents are confidential and only data is used that can be published in this research. As an intern for the Eurbanlab innovation project I was involved in the fieldwork that is characterized by active looking, informal interviewing, collective discussions and writing detailed field notes [71]. That is why participant observation is also used as a data source. It enabled me to learn about the activities of the people in the day-to-day routine of the Eurbanlab innovation project by observing and participating in those activities.

The results of this validation can be used to see if the business model template is valid. If the Eurbanlab innovation project does not support the designed model, the template is not valid in the designed way. However, if the Eurbanlab innovation project does support the designed business model template, more research is needed to support the validity. Within the scope of this research it was only possible to perform one test case.

3.4 Implementation

In order to implement the designed business model template as a tool for innovation projects, a change plan should be set up based on the major changes that need to be realized within the Climate-KIC organization. A stakeholder analysis should be conducted with a resistance analysis to the planned actions for each stakeholder group [68].

The types of resistance that need to be dealt with are [68]:
1. Lack of understanding (not understanding the solution or that there is a problem)
2. Differences in opinion (disagreement with the solution)
3. Lack of trust from the members of the change organization
4. Low willingness to change (too many details in the design, fear of the unknown, etc.)
5. Conflicts of interest

The change plan should include the specifications of the designed business model template and objectives of the change process (including why the redesigned business model is better), the specifications and timing of the actions to be taken, the people that are involved in the change process and measurements of success for the implementation.

3.5 Quality of the research

In order to improve the quality of the research, the reliability and validity of the data collection are taken into account.

The reliability means that if the research is repeated with another researcher and different respondents, the outcome will be the same [65]. To establish this, there is carefully documented earlier in this chapter how the data is collected and how the coding procedures are done. The interpretation of the coding is somehow subjective, influencing the possibilities for repeating the research in the same way.

The validity makes sure that all the aspects of the research topic are covered. For an exploratory case study research, construct- and external validity are important [72]. The construct validity is to establish correct operational measures to reduce subjectivity and in this research this is done by using multiple sources of data to perform the analysis. The external validity establishes the domain in which the case study findings can be generalized. This is an analytical generalization in which the case study analysis is used to design a business model template. To validate this generalization, this business model template is tested with the Eurbanlab innovation project to see if the model based is valid. If two or more cases support the same model, generalization can be claimed. However, in the scope of this research it was only possible to perform one case (Eurbanlab) within the case study of the Climate-KIC innovation projects.

The validity types are visualized in table 4, together with their role and measures taken in this research to improve them.

TABLE 4 VALIDITY TYPES

Research quality	Role	Measures
Reliability	Reproducibility of the research with another researcher and different respondents	Carefully document data collection and data analysis
Construct validity	Establishing correct operational measures to reduce subjectivity	Use multiple sources of evidence
External validity	Establishing the domain of which the case study findings can be generalized	Test designed model with Eurbanlab case

3.6 CONCLUSION

In this thesis an exploratory case study research is conducted to analyze how the Climate-KIC regulation has an influence on the transformation of Climate-KIC innovation projects into startups. The data that is collected consists of semi-structured interviews among innovation project managers, entrepreneurs from startups and business developers within the three KICs. The quality of this research is improved by taken into account the reliability and validity of the data collection. The conducted interviews and documents from Climate-KIC, EIT and other European institutes, form the base to perform the data analysis. The analysis of the quantitative interview data consists of a grounded theory approach, based on open coding, theoretical coding and selective coding. The results of the data analysis are visualized in tables. These tables are used in combination with the collected documents to define how the Climate-KIC regulation has an influence on the transformation of Climate-KIC innovation projects into startups and to explore opportunities within this regulation. The data deducted from the analysis is used as a base for the design of a business model template for Climate-KIC innovation projects. Within this research this business model template is validated with the Eurbanlab innovation project to test the practical implications. To implement this business model template in the Climate-KIC organization, a change plan needs to be written. The following chapters provide the data analysis of the case study research and the design of the business model template with the validation and implementation plan, as defined in this chapter.

4 Analysis of the Climate-KIC regulation

This chapter presents the analysis of the conducted semi-structures interviews and the documents from Climate-KIC, EIT and other European Institutes. To understand the influence of the Climate-KIC regulation on the transformation of innovation projects into startups, it is important to first get insight on what a Climate-KIC innovation project is and what the criteria are to start an innovation project. Subsequently, this chapter is divided into different topics for which the interview respondents recognized problems within the Climate-KIC regulation. Each of these topics starts with the problems that are noted by the respondents, then the formal base of these problems within the Climate-KIC organization is discussed based on the collected documents. The topics all end with opportunities that are recognized within the Climate-KIC regulation to facilitate the transformation of Climate-KIC innovation projects into startups. This is valuable for the Climate-KIC organization, since on the one hand this transformation addresses the commercialization problems of these. On the other hand, the Climate-KIC business plan of 2014 recognizes that the transformation of innovation projects into startups in the field of climate change remains challenging [15]. The different topics that are discussed in this chapter are the Climate-KIC partnerships, funding of the innovation projects, lifetime of an innovation project, intellectual property rights and support from Climate-KIC. This chapter ends with concluding which are the most important opportunities for the Climate-KIC regulation to influence the transformation of Climate-KIC innovation projects into startups.

4.1 Climate-KIC innovation projects

The Climate-KIC innovation Pillar has two types of projects; the pathfinder projects and the innovation projects. The pathfinder projects last up to one year, get a budget of 10.000-100.000 euro and are meant to investigate whether there is a market demand for certain innovative ideas [57].

The projects from the Climate-KIC innovation pillar that are of interest for this research are the innovation projects. These are large projects, with a financial support of more than 200.000 euro per year and can last up to three years. They facilitate cooperation between research, public and private partners from the Climate-KIC network to transfer knowledge and to create and launch innovative climate-relevant solutions to the market in the form of a self-sustaining economic activity.

To start an innovation project, certain criteria need to be fulfilled, which are visualized in figure 7.

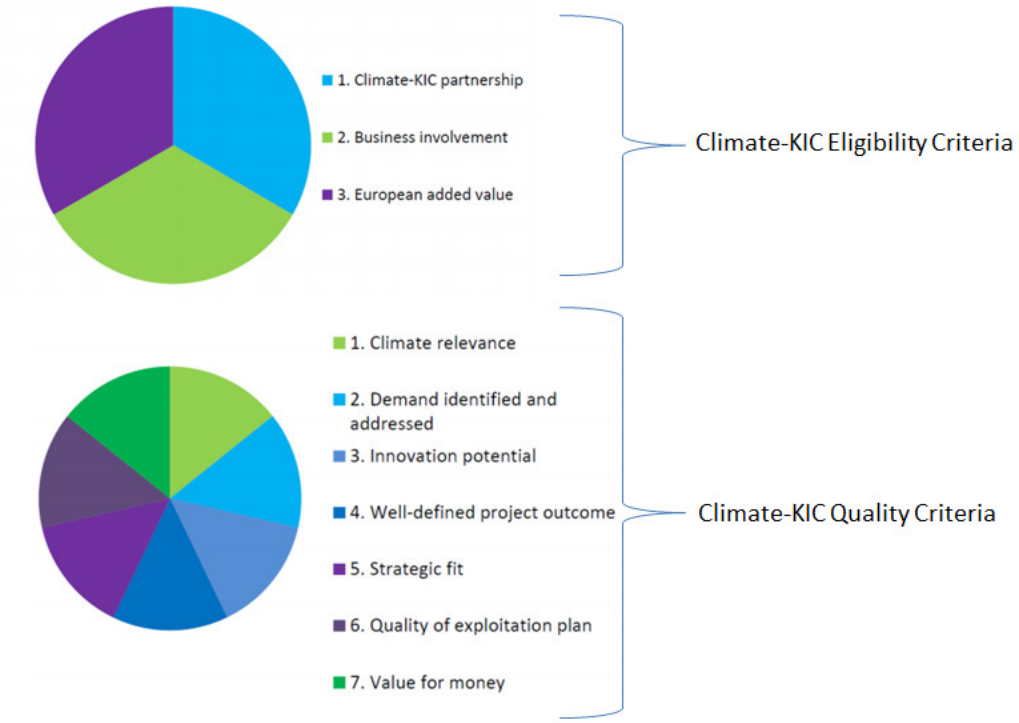


FIGURE 7 CLIMATE-KIC CRITERIA FOR INNOVATION PROJECTS [57]

If a consortium wants to execute an innovation project, it should fulfill the Climate-KIC Eligibility criteria, being:

1. *Only partners from Climate-KIC can be part of the consortium*
2. *At least one Climate-KIC business partner must be involved (not only research partners)*
3. *The consortium has to be orientated to drive climate innovation in Europe*

The second group of criteria that need to be fulfilled are the Climate-KIC quality criteria [57]:

1. ***Climate relevance:*** *the project proposal should have an expected beneficial climate impact that needs to be demonstrated on the basis of a consistent methodological approach developed by Climate-KIC*
2. ***Demand identified and addressed:*** *evidence on the market demand and the ability of the innovation to fulfill this demand need to be provided*
3. ***innovation potential:*** *rationale for what is new or more effective in the project proposal (knowledge, technologies, processes, services or products)*
4. ***Well defined project outcomes:*** *concrete outcomes contributing to the creation of a self-sustaining economic activity should be created (e.g. product/services launched, start-up created etc.)*
5. ***Strategic fit:*** *thematic fit of a project proposal with the strategic focus of one of the challenge platforms*
6. ***Quality of exploitation plan:*** *a clear, realistic plan to achieve the project outcomes*
7. ***Value for money:*** *how the proposed activities can achieve a high quality outcome in an efficient manner*

Innovation project proposals can be send in once a year and the selection happens in two phases. The first phase is the innovation idea selection and the second phase is the full proposal selection. The aim of the first phase is a convincing presentation of maximum four pages on the climate addressed and proposed solution. This should include arguments on four out of seven quality criteria from above (strategic fit, climate relevance, identified demand and innovation potential). The presentation has to include the participating partners with their strengths and competences, timeline and milestones and required and available resources [73]. These submissions are evaluated by the relevant Challenge Platform teams before the final decision is taken by the Climate KIC Executive Team. There are eight thematic sectors where Climate-KIC aims to make a unique contribution in addressing global climate change and for each of them a Challenge Platform is set up to decide rather the submitted proposals have a thematic fit with the strategic goals for that year.

The proposals that receive a positive evaluation in the first phase go through to the full proposal phase. In this phase the solutions are presented in a more detailed and elaborated manner of 20 pages, including the full range of Climate-KIC quality criteria. The full proposals are evaluated by external experts and the final decision for the selection of innovation projects for that year is done by the Climate-KIC Executive team.

At the actual start of the project, the partners of the consortium have to sign a consortium agreement. This agreement stipulates partner rights and obligations, project management and governance, liability, confidentiality, etc. [57]. A kick-of meeting is then held after the consortium agreement is made to ensure that all stakeholders have the same understanding of the project. The following is discussed during the kick-of meeting:

1. *Definition/confirmation of project scope and boundaries*
2. *Discussion of main project stages, leading towards milestones*
3. *Agreement on the main outcomes and anticipated impacts*
4. *Discussing of partner roles and responsibilities within the project*
5. *Identification of project risks and risk management strategies*
6. *Discussion of project budget distribution and funding*
7. *Definition of a project communication plan*
8. *Discussion of the goals and output of the first project stage*

The further analysis of this chapter will show that the Climate-KIC regulation regarding the selection criteria for an innovation project can be sharpened further to enhance the eventual transformation of innovation projects into startups.

4.2 Climate-KIC partnerships

The Climate-KIC partnerships regulations could affect the creation of innovative products or services. The paragraph first describes the problems that are analyzed from the interviews, then discusses the formal partnership regulation as written in the collected documents and lastly provides opportunities for the Climate-KIC regulation to influence the transformation of innovation projects into startups.

4.2.1 INTERVIEW ANALYSIS

According to the interview analysis that can be seen in *Appendix Climate-KIC partnerships*, the Climate-KIC partnership regulation can have a negative influence on the commercialization of new products and services. In order to work on an innovation project, an organization needs to be a partner of Climate-KIC, as stated in the Climate-KIC eligibility criteria. The respondents of the interviews discuss that in this way the best expertise might not be involved to reach the commercialization goals of the innovation project. It is possible that the consortium of an innovation project wants to work with a specific research or business organization that is not a partner, but has specialized knowledge or has personal connections with the consortium members. This could have a positive influence on the collaboration, but is not possible in the current regulation. In many cases the respondents discuss that the best expertise regarding the creation of innovations can be found in SME's and startups, since they are the parties that are driven to bring technology to the market and have the ability to do research in fields in which big corporates do not see immediate value.

4.2.2 CLIMATE-KIC REGULATION FOR PARTNERSHIPS

The lack of free partner choice within innovation projects and the limited options to involve SME's and startups in these projects is due to the Climate-KIC partnership regulation. This is because *"Climate-KIC is a community-based innovation initiative. Only Climate-KIC community members (KIC core or affiliate partners) are therefore eligible to participate in Climate-KIC innovation and Pathfinder projects."* [57]. So in order to receive funding from the EIT and participate in an innovation project, a knowledge institute or business must be a Climate-KIC partner.

The main question is thus: "How can a company become a Climate-KIC partner?". There are two forms of partnership for Climate-KIC: core partners and affiliate partners [74]. If companies are interested in becoming a partner, they must have a *"relevance with the Climate-KIC mission and activity"* and they must be associated with one (or in case of core partners: at least one) co-location center. These are both freely interpretative and superficial partner requirements, so more profound reasoning in legal terms is examined to get to the bottom of the question of "How to become a Climate-KIC partner?".

The two main differences between core and affiliate partners can be distinguished from a legal and financial point of view. In terms of legal aspects the core partners are collectively responsible for the governance of Climate-KIC (via the Assembly and Governing Board) and the affiliate partners are not.

The financial contribution that the core partners have to make is fixed and is defined as an *"Explicit intention to provide an in-kind contribution of minimum value 250,000 Euro per year to KIC added value activities (KAVA), which can include in-kind contributions made by subsidiaries, members or affiliates of a Core Partner."* [74].

For the affiliate partners the financial contribution is defined as an *"Explicit intention to provide an in-kind contribution to KIC added value activities (KAVA) of a minimum value as specified by the Assembly from time to time, which can include in-kind contributions made by subsidiaries, members or affiliates of the Affiliate Partner. This requirement can be waived by the Governing Board."* [74].

KIC added value activities are *"activities carried out by Climate-KIC and/or Climate-KIC Partners, or by them in co-operation with other entities that within the priority areas of the KIC stimulate innovation. These activities include education, research and innovation and entrepreneurial programs as well as programs and projects contributing to the integration of the knowledge triangle within the KIC. The latter programs and projects include, in particular, supporting and delivering the appropriate leadership, governance, co-location centers, mobility, intellectual property rights, coordination, administration and engagement by the KIC with other actors in Europe and beyond."* [75].

Thus, to become a partner the actual contribution that needs to be delivered by core partners is more or less fixed at 250,000 Euro per year (not taking in to consideration 'the explicit intention'). For affiliate partners it is not transparent how large the financial contribution must be. So an even more in depth analysis of the Climate-KIC documents is needed to understand what an organization has to contribute to become a Climate-KIC affiliate partner. For this purpose the partnership contracts are examined.

Once a partnership agreement is made between Climate-KIC and an organization, an Internal Agreement is signed that sets out the core terms on which EIT funding is granted and this is supplemented by a Partner Grant Agreement, that is incorporated under Dutch law [76]. This Partner Grant Agreement is signed every year and regulates the payment of the actual EIT Grant Funding to the Climate-KIC Partner. To get more insight in these payments, it would be interesting to examine a Partner Grant Agreement, however those are not publically available and the internal agreement does not give transparency on the investment for affiliate partners. It does mention the following: *"The parties undertake to preserve the confidentiality of any document or any other material directly related to this Agreements that is classified as confidential, if disclosure could cause prejudice to the other party."*[77], making it not possible to get more insights on the actual partner investments.

The Climate-KIC documents do not fully give a transparent answer on how organizations can become Climate-KIC partners and thus how startups or SME's could be involved in these projects.

It might be the case that the SME's that are interesting for an innovation project are not eligible to become a Climate-KIC partner or are not a partner at the moment of subscription for an innovation project. In both cases it is not possible for the SME to join the innovation project, except if they could be involved with subcontracting.

The EIT has set up general rules for subcontracting [78]. The essence is that KIC partners may have subcontracts with suppliers and service providers that are not other KIC partners. This is only possible if the partners have sufficient resources to carry out the activities, which means that subcontracts can only cover a limited execution part of the KIC added value.

This is the part that the partner cannot execute itself or it is more efficient to use the service of a specialized organization for this part.

The subcontract is based on business conditions, where the subcontractor charges a price and works without the direct supervision of the KIC. The motivation for the subcontractor is only the profit of the commercial transaction, not the KIC added value activity itself. The work carried out by the subcontractor belongs to the KIC partner and the subcontractors do not have any intellectual property rights on the activity and have no rights or obligations to the EIT or KIC partner. The KIC partner shall award the subcontractor on the best value for money basis (best price-quality ratio with the inclusion of social, environmental and other qualitative considerations) or the lowest price conform the technical requirements, if this is appropriate. All conflicts of interest need to be avoided. For public parties national procurement principles apply. Private entities must apply the rules for awarding procurement contracts, meaning that at least three offers have to be received.

If these rules for subcontracting are read carefully, it means that involving SME's in an innovation project is formally not possible since SME's would then be subcontractors for innovation projects. This means that they are not working towards the innovation and therefore are not eligible to receive the intellectual property rights. For the involvement of SME's with specialized expertise it is also not always possible to involve a tender between at least three offers, due to the limited available expertise.

4.2.3 Opportunities in the Climate-KIC regulation

The restricted partnership regulations causes limited free partner choice within Climate-KIC innovation projects and makes it almost impossible for SME's and startups to be involved in these innovation projects in a formal way.

It is not entirely impossible to become an affiliate partner for Climate-KIC, however it is not transparent how to become an affiliated partner. If SME's only have interest in participating in a certain innovation project due to their specialized, but limited expertise, there can be discussed if they want to become a partner of Climate-KIC. It is not attractive for the SME's to comply with the rules regarding the "KIC added value activities".

The Climate-KIC partner list for 2014 holds more SME's than the perspective of the respondents from the interviews show. This could be a step in the good direction for future innovative projects. However, during the course of innovation project, new SME's or startups with expertise might show up that could support the creation of new products and services. They would then still be left out of these projects, because they are not yet registered partners.

According to my opinion, these partnership regulations could also lead to shady and non-transparent practices. Since there is no record of the minimal KIC added value activities that affiliated partners need to deliver, SME's could be involved without making a significant contribution and making them eligible to take part in all innovation projects and receive EIT funding. This can lead to unfair competition for other SME's and a missed opportunity for Climate-KIC.

Since in this way the SME's are still chosen on the registered partnership base and not on their competences. It is also not interesting to have too many SME's as Climate-KIC partners, since their financial capacity is not as large as the capacity of multinationals.

The Climate-KIC partnership regulation has an influence on the transformation of innovation projects into startups, because this regulation does not always involve the parties that are the most driven and specialized in creating new relevant products and services, which are necessary to form a commercialization base of a startup. To solve this, I see opportunities in improving this regulation in the form of the creation of an accelerator program especially for SME's and startups. In this program the SME's and startups should receive funding to develop the innovative products and services to contribute to the innovation project. The other partners of the innovation projects should then receive less funding, but shares on the developed innovation to middle out their financial investment.

4.3 Intellectual property rights

The Climate-KIC regulations for intellectual property rights could affect the commercialization of new products or services. This paragraph first describes the problems that are analyzed from the interviews, then discusses the formal intellectual property regulation as written in the collected documents and lastly provides opportunities for the Climate-KIC regulation to influence the transformation of innovation projects into startups.

4.3.1 Interview analysis

Despite the fact that the Consortium Agreement does include intellectual property rights, the respondents from the interviews state that this regulation is not enough to avert conflicts regarding the joint intellectual property. *Appendix Intellectual property rights* shows the statements of the interviewees regarding the intellectual property rights. The fact that Climate-KIC is still in a learning process regarding intellectual property, can be seen in the ownership tensions regarding the created intellectual property. It can happen that the gained knowledge in the innovation project is assigned to a certain partners' background, which is not correct. In this way Climate-KIC and the other partners are not allowed to use the created intellectual property. Typically these discussions come up in a later stage of the innovation projects, giving these projects a challenging and expensive juridical dimension with the involvement of many contractual experts to determine who is entitled to which part of the created intellectual property.

4.3.2 Climate-KIC regulation for intellectual property rights

The intellectual property policies for the KICs still remain a work in process in terms of design and implementation, due to the young age of the KICs [79]. Although defining a clear intellectual property policy has been mandatory for the KICs, there is relatively little public information available on how the management of intellectual property has been arranged in each KIC [80].

The KICs have been required to set up intellectual property rights to clear out principles for ownership and access rights respecting EU rules. This in order to maximize the utilization of knowledge to reach the KICs business goal. The challenge here is to create a structure that fosters innovation and encourages the free flow of information, whilst respecting individual project participant's rights and avoiding false incentives [81].

For Climate-KIC, the general basic principles for intellectual property rights (e.g. ownership principles and intra project licensing), are defined in the Partner Grant Agreement (PGA). However, this still leaves a wide flexibility for the project partners to agree on different structures, which are defined per innovation project in the Consortium Agreement [81]. In this document new agreements can be made around new ownership structures, the exploitation of foreground intellectual property and rules about sharing background intellectual property. In the context of research and development projects, foreground intellectual property is the intellectual property arising from a project and background intellectual property is owned by one of the partners and is generated before the start of the project [82].

The Consortium Agreement for innovation projects is based on a basic structure that is provided by Climate-KIC. This structure includes the following topics [81]:

- → The use of intra-project licenses do not include the right to use the intellectual property from other parties for commercial purposes.
- → It encourages the flow of information through publications and encourages intellectual property owners to act cooperative and in a reasonable matter when requests to exploit intellectual property are made.
- → Joint ownership of intellectual property should be avoided in an ideal context, given the complexity it creates. However, where it is likely to occur partners should agree a regime to clarify each owner's rights to deal with, protect and license the relevant intellectual property. An example of the clause in the basic structure of the Consortium agreement states *"Where, in the case of joint creation or invention of Results, it is impossible to distinguish each Party's intellectual contribution to the Results, or the share of contribution between joint owners cannot be established, the Foreground Intellectual Property in such Results will, unless otherwise agreed in writing between the relevant Parties be owned jointly by the relevant Parties in equal shares"* [81].

The template of the Consortium Agreement for Climate-KIC innovation projects states that the created intellectual property within the innovation project (foreground intellectual property) is owned by the relevant partners. Climate-KIC does not have ownership, however is entitled to use this intellectual property for reaching the Climate-KIC objectives. Although the other partners of the innovation project did not create the intellectual property, they are entitled to using it. It is therefore important for all involved partners to clearly distinguish background and foreground knowledge.

4.3.3 Opportunities in the Climate-KIC regulation

The formulation of background and foreground knowledge is not easy and is also inseparable from the financial profits for each party. Typically these discussions come up in a later stage of the innovation projects, giving this a challenging and expensive juridical dimension. Research has shown that the negotiations and juridical administrations in a later stage of the project are not a problem for knowledge institutes, SME's and national firms [79]. For larger multinational firms it is harder to get the intellectual property regulations of the innovation projects in line with the internal intellectual property policies of the companies, which are often not easy to adapt. Especially when the consortium exists of large parties of different actors from different companies, with their own intellectual property policies and own goals formulated to join the innovation project. Furthermore, the representatives of these multinationals in the innovation project often do not have large possibilities to influence the activities of the company in terms of intellectual property. Also the replacement of staff members from the multinationals on the innovation project, have negative impact on the efficient formulation of a commonly agreed intellectual property rights policy.

The Climate-KIC intellectual property regulation has an influence on the transformation of innovation projects into startups. This because the regulation can hinder the commercialization of new relevant products and services, which is necessary as a commercializing base for a startup. In the current situation it is possible that there are discussions between the different owners of the foreground knowledge on how to commercialize the innovation. Juridical conflicts to determine which partners actually worked on the joined creation of the innovation are also common.

In my opinion it would be better to state in the consortium agreement that all intellectual property will be handed over to the startup that is formed out of the terminated innovation. All the partners from the innovation project consortium should then receive shares from this startup. These shares are based on annual reporting of the commitment of each partner and input in the innovation project, according to the Partner Grant Agreements. The advantage of this idea is that no extra arrangements regarding intellectual property rights have to be made in order to commercialize the developed products or services. This is because commercialization will be reached automatically when the innovation project becomes a startup. This also stimulates the partners to work together to create a successful startup, since this is the only way to generate income from the intellectual property rights. If no startup is formed after the innovation project, this intellectual property can still be divided among the partners in another way, however this can be subject of juridical conflicts.

4.4 Funding for the innovation projects

The Climate-KIC regulations regarding funding could affect the creation of innovative products or services. This paragraph first describes the problems that are analyzed from the interviews, then discusses the formal funding regulations as written in the available Climate-KIC documents and lastly provides opportunities for the Climate-KIC regulation to influence the transformation of innovation projects into startups.

4.4.1 *Interview analysis*

According to the interviews the regulation of the funding of Climate-KIC innovation projects has room for improvement, as can be seen in *Appendix Funding for Climate-KIC innovation projects*. The most interesting discussions handle the administration of personnel and travel costs, the necessity of KIC Complementary Activities and the financial attractiveness of partners to get involved in these innovation projects. The partner organizations partly fund the Climate-KIC innovation projects with KIC Added Value Activities, such as travel costs and personnel costs, which need to be documented very carefully, since European tax money is used to fund the KICs. This is quite bureaucratic; it is time consuming and therefore costly to spend hours on documenting all of this in a specific way, since these hours are also seen as personnel costs that are declared to the innovation project. One interviewee discusses that for these European gatherings a lot of travel and personnel costs are spend, that are not directly stimulating the creation of the innovation. As an example he states that just being at a meeting for a whole day can cost 1000 euros per person that is present, which can become a large part of KAVA if a lot of European meetings are held.

The KIC Complementary Activities (KCA) are costs that partners make to provide the knowledge base and support competences to enable a KIC innovation project. Climate-KIC finances a lot, but KCA's are needed to be put in the project to support it. One interviewee discusses that the commitment of the partners is higher if they also invest KCA in the innovation projects.

The last discussion brought up by the respondents is the fact that the indirect costs for organizations are limited to only 25% of the total direct costs. These indirect costs are office spaces used by personnel, use of ICT in the offices of personnel, etc. This limitation makes it less and less interesting for big companies to be involved in Climate-KIC innovation projects. One of the interviewees states that only 80% of the personal costs are covered, due to the overhead cost limitation of 25%. Since big companies have large overhead costs, this brings great loses for these companies and can endanger the attractiveness of Climate-KIC.

4.4.2 *Climate-KIC regulation for the funding of an innovation project*

Climate-KIC receives financial support from the EIT for a certain project lifetime to develop innovation activities and projects [4]. The remaining necessary budget is raised by private funding, since the projects are likely to generate returns and therefore private parties are expected to buy into these projects to benefit from the outcomes [10]. In order for partners to receive a grant, they first have to lend it to Climate-KIC since this is the core of the Climate-KIC business model in financial terms [15]. The average partner is paid seven months in arrears and Climate-KIC never 'pre-finances' in the correct meaning of the word.

Zooming in more on a Climate-KIC innovation project, the funding exists of three different parts: the Climate-KIC funding, the Co-funding and complementary funding [57]. These three types of funding are visualized in figure 8.

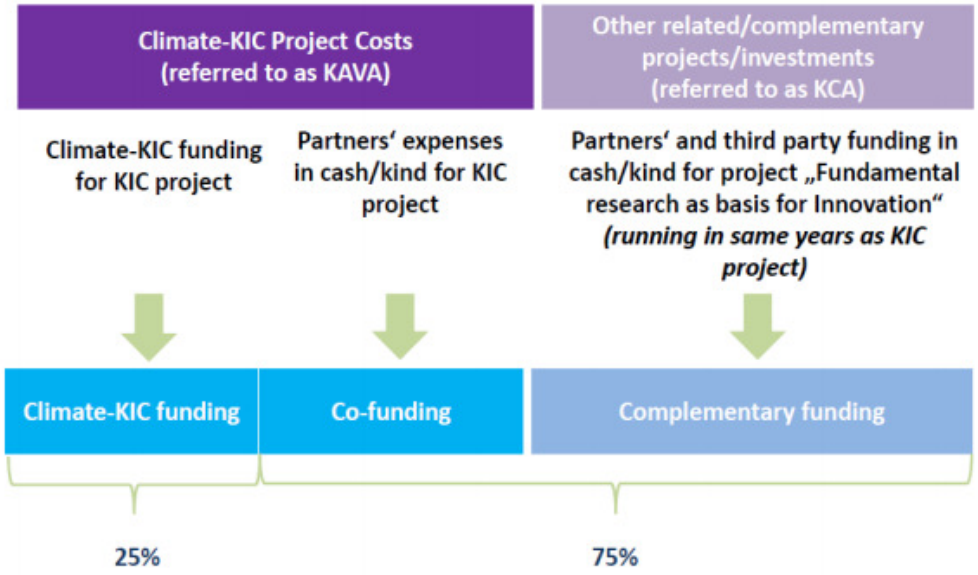


FIGURE 8 FUNDING FOR CLIMATE-KIC INNOVATION PROJECTS [57]

The Climate-KIC funding is the part that is financed by Climate-KIC through the EIT grant. The co-funding represents the innovation project costs covered by the involved partners in the project consortium and the complementary funding is all extra funding by partners or third parties (e.g. research, education). The actual project costs are 25% of this total and 75% exists of other thematically related activities implemented by project partner institutions, as arranged by the Partner Grant Arrangements with each of the Climate-KIC partners [81].

These three types of funding can be divided in two cost activity categories; the Climate-KIC funding and co-funding are part of the KIC Added Value Activities (KAVA) costs and the complementary funding is part of the KIC Complementary Activities (KCA) costs.

The costs for KIC Added Value Activities need to be documented very carefully and consist of all the costs which relate to the actual work undertaken in the project to produce tangible innovative outputs. These mainly consist out of direct costs and indirect costs [78]. Direct costs can be defined as:

- Personnel costs (costs of the actual hours worked on the KAVA);
- Travel, accommodation and subsistence costs (staff working on KAVA);
- Fixed assets and capital expenditure (costs of purchase, rent of property, plant and/or durable equipment, including hardware);
- Subcontracting costs (can only cover the execution of limited parts of KAVA);
- Other direct costs (consumables, office supplies, etc.).

Indirect costs are not directly attributed to the KAVA (office spaces used by personnel, use of ICT in the offices of personnel, etc.). In 2014 the regulation for the indirect costs changed and now for the business partners these costs are only eligible up to a rate of 25% of the total direct costs. In case of non-profit public, higher education establishments, research organizations or SMEs, this threshold may be 40% [78].

The KIC Complementary Activities (KCA) costs are the costs made to provide the knowledge base and supporting competences to enable a KIC innovation project [83]. These complementary activities are not activities that a KIC project conducts to produce tangible innovation output, but rather the knowledge base and supporting competences that the Climate-KIC innovation project builds on.

4.4.3 Opportunities in the Climate-KIC regulation

Literature shows that the collaboration between partners of different backgrounds has a financial impact in all collaboration projects. The individuals working in the projects are part of systems that are very different in their mission and vision, resulting in transaction costs. These costs are based on negotiating objectives, choosing methodologies, managing logistics for communications and face-to-face meetings. These costs lead to disincentives towards collaboration [27]. The fact that Climate-KIC provides the opportunity to cover these transaction costs with the KAVA, stimulates the collaboration.

The main problem regarding funding is the fact that Climate-KIC might not be attractive anymore for big companies, since the indirect costs are limited to 25% of the direct costs, which causes losses for big companies. This is a problem since for big companies the overhead costs are more than 25%. Climate-KIC has implemented this measure to cut costs, since Climate-KIC is facing an increasing debt problem [15].

In my opinion, a better way for Climate-KIC to cut costs is a reward system based on deliverables. Instead of refunding partners for worked personnel hours, travel and accommodation costs, the funding should be based on deliverables. This is much more attractive for Climate-KIC and for the partners. If the partners are fully responsible for these overhead costs and are being paid for delivered quality instead of the worked hours, the quality will be higher for Climate-KIC. This means that the marketing position is better, meaning higher value and higher potential revenues for the partners. In this way a positive effect on the transformation of innovation projects into startups is created, since this delivers higher quality products and services that can be commercialized. Another benefit of this system is that it is no longer possible to declare worked hours to a project in which no real value is added, causing the partners to stimulate their personnel to work more efficient.

4.5 Lifetime of an innovation project

The Climate-KIC regulations regarding the lifetime of an innovation project could affect the creation of innovative products or services. This paragraph first describes the problems that are analyzed from the interviews, then discusses the formal regulation regarding the lifetime of innovation projects as written in the collected documents and lastly provides opportunities for the Climate-KIC regulation to influence the transformation of innovation projects into startups.

4.5.1 Interview analysis

The interview analysis regarding the lifetime of an innovation project can be seen in *Appendix Lifetime of an innovation project*. This table gives an overview of the main issues that occur regarding the lifetime of an innovation project. The most important ones are the long time it can take to bring an innovation to the market and the opportunities of portfolio management for Climate-KIC to solve this problem.

The interviews show that not all innovation projects have the ability to be launched to the market within the lifetime of the innovation project. The main goal is that all these projects are commercialized one way or another, but this is not always the case. It is possible that the market is not yet ready for these innovations or the innovation needs more development time or it is too costly to launch the innovation in the current market.

The interviews with KIC Innoenergy show that this organization uses a portfolio management system, which could also be a good opportunity for Climate-KIC. This portfolio management works with a strict stage-gate approach; when some projects are not viable, they are stopped and the funding is allocated to another project with more potential to launch the developed innovation. It is also possible to put projects aside until the market is ready for it. The projects of KIC Innoenergy typically last one year, so all the projects have a limited amount of time to develop an innovation, but this strict period of time could also mean a more efficient project.

4.5.2 Climate-KIC regulation for the lifetime of an innovation project

The project lifetime for Climate-KIC innovation projects is one to three years, which is longer than the innovation projects from the other KICs, where the lifetime is typically one year [57]. The innovation projects from the KICs are just like other European subsidized programs that have a beginning and an end. These projects are not easy to capture in one or three years.

4.5.3 Opportunities in the Climate-KIC regulation

Sometimes it is not possible to reach the goals of the innovation projects and thus to launch the developed innovations to the market. If this is the case, the EIT funding is not used sustainably. Sometimes the market is not ready for the created innovation and it can take some time before the innovation can be launched. If the project is not viable or does not have enough potential, there should be intervened to stop the project and then good portfolio management could monitor the market and the projects to bring them back to live when the time is right. An example of this portfolio management is provided by KIC Innoenergy.

The lifetime of an innovation project also has an influence on the transformation of innovation projects into startups. It can be seen as a benefit that Climate-KIC has the opportunity to financially support the innovation projects for three years, since the partners have more time to develop an innovation.

However, it is not transparent what the criteria are to gain more than one year to finalize the innovation project, which can be subject to opportunistic partnerships with another agenda than the actual launch of the innovation.

In my opinion, an interesting opportunity in the Climate-KIC regulation to stimulate the transformation of innovation projects into startups is to let the innovation projects follow upon Pathfinder projects. These projects cost significantly less money than the innovation projects and are created to investigate whether there is a market demand for the innovation in question. In this way only the successful projects will continue to become the costly innovation projects, which means that the EIT funding can be used more efficiently and projects that are working on innovations that do not fit the market are avoided.

4.6 SUPPORT FROM KIC

The Climate-KIC regulations regarding Climate-KIC support could affect the creation of innovative products or services. This paragraph first describes the problems that are analyzed from the interviews, then discusses the formal funding regulation as written in the collected documents and lastly provides opportunities for the Climate-KIC regulation to influence the transformation of innovation projects into startups.

4.6.1 INTERVIEW ANALYSIS

As can be seen in *Appendix Support from Climate-KIC,* the interviewees would prefer more intense involvement of a business coach in innovation projects. The business development coaching and Climate-KIC training sessions are very well elaborated for startups, but there should be more stress on the involvement of a business coach in the Climate-KIC innovation projects. The business development coaches have recognized this to be valuable and are already implementing this for the new innovation projects. The ability of the business coaches to scale the commercialization on a European level is also considered an important aspect of the business development opportunities of the KICs.

The strengths of the network support that the KICs provide, is very valuable according to the interviewees. The Climate-KIC partners are offered a platform to meet each other, discuss different topics and find each other to perform new projects. In this direction KIC Innoenergy organizes network meetings and EIT ICT Labs has set up a community for startups to meet each other and discuss the problems they are facing. Since the startups have the same difficulties along the way, this is an efficient way to find solutions together.

The respondents also discuss the opportunities of an investment platform with insight in which investors are interested in which type of innovation projects and startups. This could give the innovation projects a good direction in terms of becoming self-sustaining and understanding the project demands of investors.

4.6.2 *Climate-KIC regulation for the support from Climate-KIC*

The support from KIC is not only financial but they also offer professional education for startups and innovation project managers, business coaching, network possibilities and exposure for the innovation projects and startups [84].

4.6.3 *Opportunities in the Climate-KIC regulation*

A good opportunity for Climate-KIC to have a positive influence on the transformation of Climate-KIC innovation projects into startups is the intense involvement of a business coach from the start of an innovation project. In this way a better view on the market potential is obtained and the scalability options in Europe will be made clearer. The business development can support the innovation project managers in all problem areas they face in creating a sustainable business from the innovation project. Also more training sessions can be given by Climate-KIC to further develop the innovation project managers of Climate-KIC to get similar insights as the business developers. Another good idea according to my opinion is to set up a community for all innovation project managers to form a discussion platform. This can give transparency to the problems that other innovation projects are facing and prevents the same obstacles to occur again in other innovation projects.

4.7 Conclusion

This analysis points out that the Climate-KIC regulation still has room to improve in order to facilitate the transformation of innovation projects to startups. Interviews with innovation project managers, entrepreneurs from startups and business developers have brought to light the opportunities that Climate-KIC has in terms of regulation about partnerships, intellectual property, funding, the lifetime of the innovation projects and support from the Climate-KIC organization.

The Climate-KIC partnership regulation has an influence on the transformation from innovation projects into startups, because this regulation does not always involve the parties that are the most driven and specialized in creating new relevant products and services, which are necessary to form a base of commercialization for a startup. An opportunity to solve this is creating an accelerator program especially for SME's, in which they receive funding to develop the innovative products and services to contribute to the innovation project. The other partners of the innovation projects could then receive less funding, but shares on the developed innovation, to middle out their financial investment.

The Climate-KIC intellectual property regulation has an influence on the transformation of innovation projects into startups, because this regulation can hinder the commercialization of new products and services, which is necessary as a base of commercialization through a startup. An opportunity to solve this is stating in the consortium agreement that all intellectual property will be handed over to the startup that is formed after the termination of the innovation project. All the partners from the innovation project consortium receive shares from this startup.

These shares are based on annual reporting of the commitment of each partner and input in the innovation project, according to the Partner Grant Agreements.

For the funding regulations another system can be used that is much more attractive for Climate-KIC, as well as for the partners. Instead of refunding partners for worked personnel hours, travel and accommodation costs, the funding should be based on deliverables. If the partners are fully responsible for these overhead costs and are being paid for delivered quality instead of the worked hours, the quality of the innovation will be higher for Climate-KIC, also meaning higher potential revenues for the partners. This has a positive effect on the transformation of innovation projects into startups, since this delivers higher quality products and services that can be commercialized.

The lifetime of an innovation project also has an influence on the transformation of innovation projects into startups, since this is the time that the partners have to create a product or service that can be commercialized. It is sometimes not viable to create innovations that are ready to be launched to the market within the scope of an innovation project. Therefore an interesting opportunity is to let the innovation projects follow upon Pathfinder projects. These projects cost significantly less than the innovation projects and are created to investigate whether there is a market demand for the innovation in question. If there is a market demand for the innovation, the transformation to a startup will also be easier, as this innovation forms the base of a commercialized based startup.

A last good opportunity for Climate-KIC that has a positive influence on the transformation of Climate-KIC innovation projects into startups is the intense involvement of a business coach from the start of an innovation project. If a business coach is involved, a better view on the market potential is obtained and the scalability options in Europe are clearer. The business development can support the innovation project managers in all problem areas they face in creating a sustainable business based on the innovation project.

5 DESIGN OF A BUSINESS MODEL TEMPLATE

The business plan of 2014 for Climate-KIC has as a point of action to focus more on the business models for innovation projects to ensure that ideation leads to commercial application and success [15]. There is a lack of appropriate business models for business and industry collaboration in literature, as signaled by Eurbanlab. Therefore Eurbanlab requested to design a business model template for Climate-KIC innovation projects within the scope of this research.

This chapter provides the design of the requested business model template, keeping in mind the functional requirements (the business model template should be appropriate for Climate-KIC innovation projects), user requirements (the members from the Climate-KIC innovation projects should be able to use it), boundary conditions (the business model template must comply with legal requirements and fit in the culture of Climate-KIC) and design restriction (the scope of this master thesis). This chapter also tests the practical implications of the designed business model template by validating it with the Eurbanlab case. This chapter ends with an implementation plan for this business model template in the Climate-KIC organization and conclusions regarding the designed template.

5.1 BUSINESS MODEL TEMPLATE FOR CLIMATE-KIC INNOVATION PROJECTS

This paragraph elaborates on the design process of the business model template for Climate-KIC innovation projects. The solution concept is first explained, which is a redesign of the Osterwalder business model canvas as a starting point to design a variant that is more suitable for Climate-KIC innovation projects. Next the designed KICs FIT ME model is presented, based on the design parameters of chapter four, the semi-structured interviews and literature. Lastly this part provides a justification in terms of operational improvements to explain why the realization of the solution will solve the current problems.

5.1.1 SOLUTION CONCEPT

The solution concept is a redesign of the Osterwalder business model canvas as a starting point to design a variant that is more suitable for Climate-KIC innovation projects. The Osterwalder canvas is therefore analyzed based on the characteristics of the innovation projects, the analysis of chapter 4 and the findings of the semi-interviews regarding business models.

The Osterwalder business model canvas is used in the beginning of the project to discover different business opportunities and is stimulated to be used by Climate-KIC. According to the interviews (analysis in *Appendix Business Model*), the model is merely seen as a useful tool in the beginning of a project to discover business opportunities, but is not continuously used in the process of the project, nor is it sure that it works in reality.

However, all interviewees agree that this model gives positive insights on the different building blocks on how the idea for the project can be used to generate business, to discover customer segments with the corresponding business model and how to sell the designed products or services. In this way the Osterwalder canvas remains an interesting tool to use while thinking of potential business after the course of the innovation project, thus for launching the actual products or services to the market.

For the creation of an innovation project this is not the most suitable model to start with. When analyzing the canvas according to the characteristics of an innovation project, the different blocks of the model that are the most important can be combined in four main categories: customers (combining the blocks value proposition, customer relationships, customer segments and channels), partners (key partners and key resources), key activities and finance (combining cost structure and revenue streams).

This division for customers is made since the interviewees state that in an innovation project, the customers are constantly involved to develop the innovation. This can be seen in *Appendix Customer involvement*. Customer involvement is important to manage risks that occur from creating products or services for customers that are not known [49]. The building block finance consists of the funding aspects for the innovation projects that have to be taken into consideration. Partners also has another meaning within the innovation projects, since in the innovation projects, the partners play a more crucial role to gain success. The building block activities is actually the innovation that plays a central role in the innovation project. These main categories within the Osterwalder business model canvas are visualized in 9.

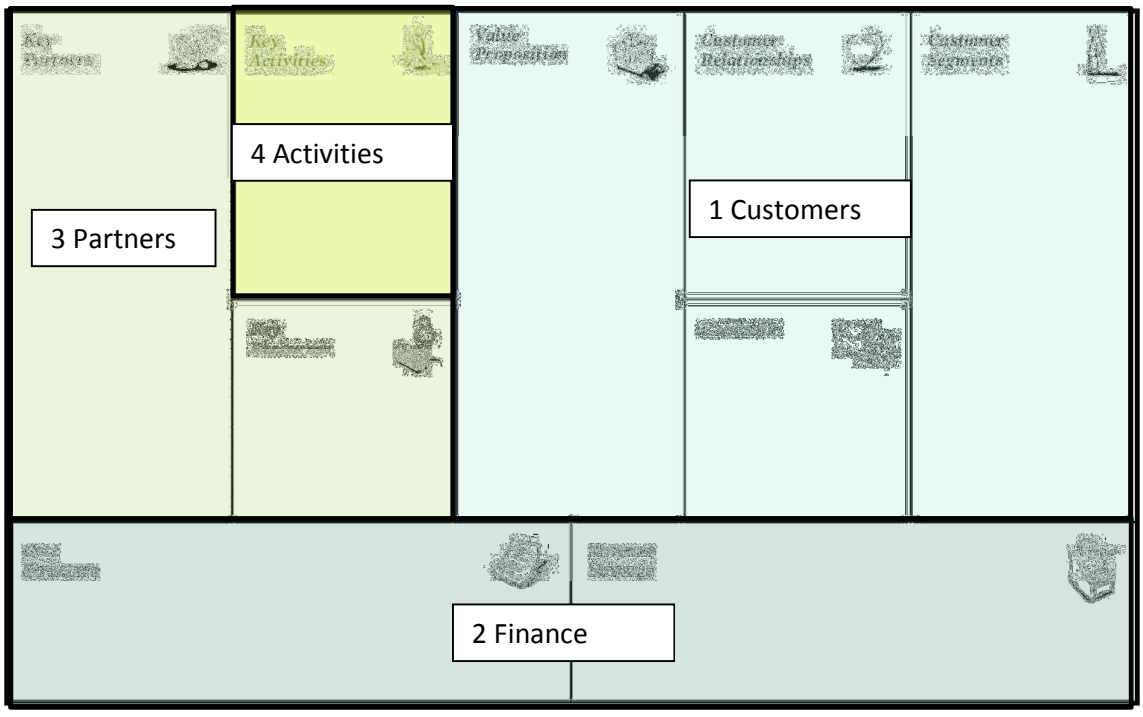


FIGURE 9 CATEGORIES WITHIN THE OSTERWALDER BUSINESS MODEL CANVAS

These categories form the base of the new conceptual business model template for Climate-KIC innovation projects to facilitate the collaboration between research and industry.

5.1.2 Design of the KICs FIT ME model

For the business model template of an innovation project, the defined blocks of customers, finance, partners and activities within the Osterwalder canvas remain important to determine. However, another business model is more suitable and complete for a Climate-KIC innovation project, regarding a positive influence on the transformation into a startup. Based on the interviews, literature and the collected documents, a new business model template is created to give more insights on different aspects that are necessary to eventually create a startup after the termination of an innovation project. The interviews give insights on different problems that the innovation projects are facing in becoming a startup that might have been averted if an appropriate business model template for these innovation projects had been deployed.

The template consists of five building blocks and in between the different building blocks, four important problem points can be distinguished. These problem points must be taken into account already in the beginning of an innovation project to avert problems later on and to influence the transformation of Climate-KIC innovation projects into startups in a positive way.

The business model that I designed is visualized in figure 10 and is called the 'KICs FIT ME' model. The five building blocks are: Finance, Innovation, Team, Market and Entrepreneur. The four problem points are Key value, IPR, Commitment and Sales.

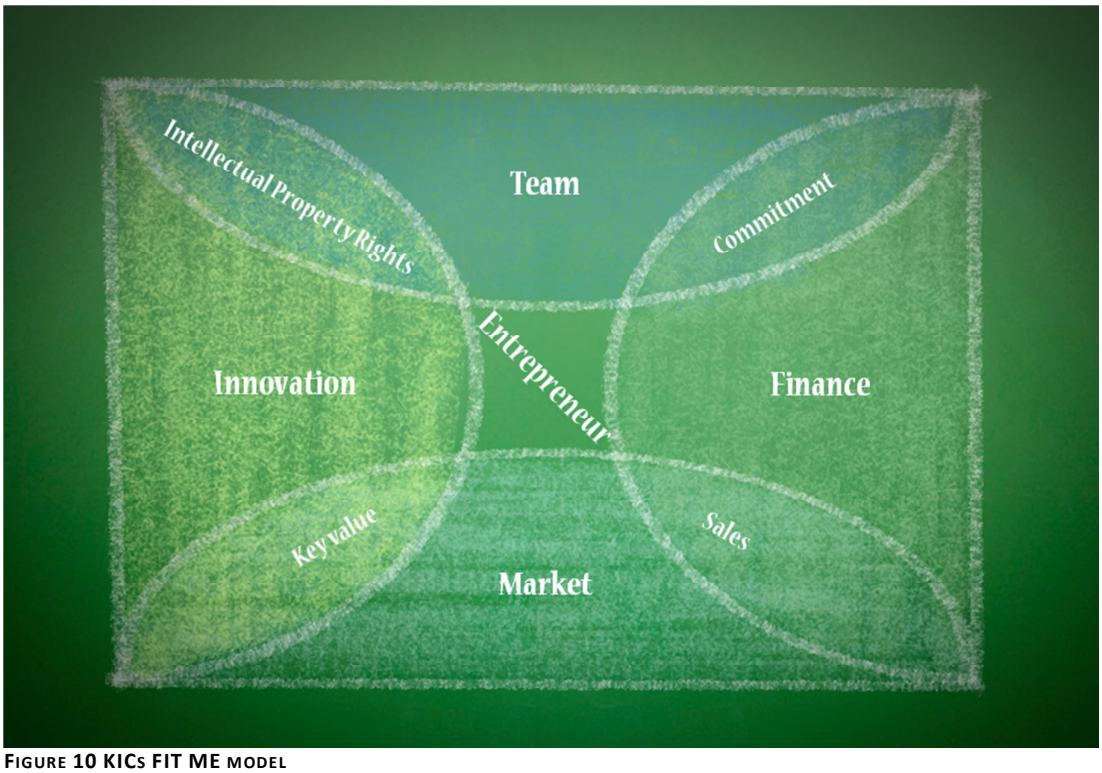


Figure 10 KICs FIT ME model

5.1.2.1 BUILDING BLOCKS

5.1.2.1.1 FINANCE

The financial input of the different partners remain the KIC Added Value Activities and KIC Complementary Activities that are registered for each partner in the annual Partner Grant Agreement. However, it would be more interesting to refund the partners based on their deliverables instead of worked hours of personnel, etc., as already discussed in the conclusions of chapter 4.

5.1.2.1.2 INNOVATION

The product or service that is developed needs to be an innovative climate-relevant solution that has the ability to be launched to the market in the form of a self-sustaining economic activity after termination of the innovation project. It is created based on research of the university or knowledge institute and supported by the marketing skills and customer knowledge of the industry and needs to fulfill the Climate-KIC quality criteria for innovation projects.

5.1.2.1.3 TEAM

In order to create an innovative climate-relevant solution that has the ability to be launched to the market in the form of a self-sustaining economic activity, it is important that the collaboration between the consortium partners is good enough to form a solid base for the creation of a startup.

The consortium of an innovation project consists of Climate-KIC partners, from which at least one is a business partner [73]. Since these consortia are thus formed by research and business partners, problems occur due to the nature of this collaboration, which is already discussed from a theoretical point of view in chapter 2. According to the interview respondents, this remains one of the largest problems in these type of research projects, as can be seen in *Appendix Team.*

Literature points out that the individual representatives from the different partners in the consortium of an innovation project also have an important effect on the collaboration, since one of the most prominent factors that predicts a successful university-industry interaction is related to inter-personal exchanges [13]. These individuals form a team and the potency of that team is the degree of collective efficacy within a group towards achieving its goals [34]. *"A team is a collection of individuals who are independent in their tasks, who share responsibility for outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more larger social systems, and who manage their relationships across organizational boundaries''* [85]. Numerous studies have showed a link between the potency of a team and performance [86].

Usually these consortia are made of people from organizations that have already worked together and know each other and that want to work on the same topic, which is very strong. Adding people from other organizations to fulfill the Climate-KIC eligibility criteria for innovation projects, might endanger this chemistry to form a good team and the interviewees agree that having a strong team to work on innovation projects is one of the most important criteria for success.

The interviews and literature state the importance of the formation of a strong team to increase the efficiency to reach the goals of the innovation projects. An interesting and easy to use tool to form efficient teams is the Belbin test [87]. The nine different team roles that need to be fulfilled in a successful team according to Belbin are visualized in figure 11.

FIGURE 11 BELBIN TEAM ROLES [88]

This tool is very easy to use to form teams for Climate-KIC innovation projects, if not all team roles are represented by the people in the proposed consortium, partners could add or remove representatives to fulfill these needs.

A challenging dimension however to these innovation projects is that due to the geographic spread of the team members all over Europe, it is not feasible to plan a face-2-face meeting for all arising discussions, making these type of teams partly a virtual team. The distinctive characteristics of virtual teams are that they are geographically and organizationally dispersed collections of individuals, who rely primarily on ICT to accomplish one or more organizational tasks [89]. Research has shown that the success of these type of teams is higher when the team members have met face to face in the beginning of the project [90]. For this type of team it is important to set up good communication systems and to have people responsible for the leadership [91]. For this, the project lead could be assigned. The interviewees point out the importance of a strong project lead to manage these large innovation projects and to have an overview of everything that is going on. The project lead is responsible for the organization of the innovation project, making the performance report and assess the quality of the performance [57].

5.1.2.1.4 MARKET

In the *Appendix Market*, the interviewees discuss the importance of knowing the market for which the innovation is created. Some interviewees discuss that often the market potential is highly overestimated and a right market focus is needed to address the needs of the customers. When searching for market opportunities, next things should be kept in mind: what are the market needs, what is the size, who are the competitors and is there growth potential [49]? Since this business model template is addressing the creation of new innovative products and services, it is hard to know if there are really customers for the developed products and services. Thinking in terms of solving the customers' problem, it is interesting to know why competitors did not already address it and why the problem is so hard to solve [48][49].

With these new products or services, it might not be very interesting to focus on the mass public. It may seem that this market is the one with the most revenues, addressing this market is very expensive. An investment in the perfect product is needed, from which it is not known if there are customers for it and if they need it. It is more interesting to first address the early adopters.

But who are these early adopters then, why are they necessary and how is the product or service different for this target group? These early adopters are step one in determining whether the product or service is really viable. If they do not want it, the mass public will not follow. The early adopters are the ones that are proud to be the first to use certain products. They want to be part of the improvement of the product, they give feedback to change the product and keep on optimizing it until the product or service is so good that there is a chance in crossing the chasm and reaching the mass public, as illustrated in figure 12. When the product is viable, the early adopters will refer it to their friends, family, etc., introducing the product or services in the mass market.

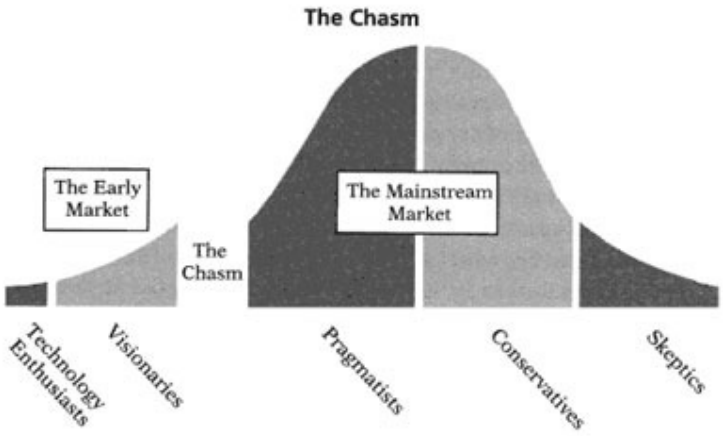


FIGURE 12 INNOVATION GAP [92]

5.1.2.1.5 ENTREPRENEUR

The interviewees discuss in the *Appendix Entrepreneur* the need for an entrepreneur to transform the innovation project into a startup. There are different opinions regarding what type of person this should be. However, some common characteristics are necessary to be fulfilled in order be successful.

First it is necessary that it is someone who knows the market and has marketing skills to bring the product or service to the market. Literature discusses that a lack of this knowledge is at the base of failure of most research spinoffs [25].

This person should be a member of the team from the beginning and have leading skills to guide the team and he/she should have financial skills. The most important aspect is that this person needs to be technical; a technician can be taught how to do marketing and finance, but the other way around is much harder.

Finding someone like this might seem impossible or very expensive. People with knowledge and experience mostly have been working for some time, have gained respect and would like to stay at the same level of income. This could give a challenging dimension to finding people like this and keeping them interested to stay involved in the innovation project.

According to my opinion, there is however another solution to solve this. It consists of involving people in the beginning of the project and train them in the skills they lack. In this way they have the chance to develop themselves during the lifetime of the innovation project to be ready to lead the startup afterwards and receive the necessary coaching from the Climate-KIC business development. A nice opportunity could be to provide Climate-KIC master students and PhD students with entrepreneurial training and in a later stage involve them in the innovation projects to make them ready to be the next generation of entrepreneurs. This is beneficial to Climate-KIC since they are young and trainable people. They want to reach something in their career and stand at the beginning of it, so they are still likely to work for less money, give a lot of energy and commitment with success being the greatest reward for them.

This entrepreneur stands in the middle of the KICs FIT ME model since he/she has to know everything from the project and has to have skills that are at the base of the other building blocks; technical knowledge, marketing and financial skills and he/she has to be part of the team that creates the innovation.

5.1.2.2 PROBLEM POINTS BETWEEN THE BUILDING BLOCKS

The four relations between the building blocks stand for the problems that currently occur in the innovation projects and that inhibit the transformation into a successful startup according to the interviews and the analysis in the previous chapter and paragraphs.

5.1.2.2.1 KEY VALUE

The market with the customers and the created innovation must overlap in a way that the innovation addresses a need from the customers.

To get insight to see if the innovation really solves one of the problems or needs of the customers, customer research is done by addressing potential customers. Most projects have a certain vision on who their customers are, but it is not sure that these are also actually the real customers that will be served with the product [49]. At the beginning of this phase, that vision is used as a hypothesis and experiments are developed to see if the results match the hypothesis. If this is not the case, the hypothesis should be adjusted and it is important to understand why the hypothesis was not right.

If the right customers are found, it is important to find out if the innovation really addresses a customer need. A simple tool that can be helpful is the empathy map, developed by the company XPlane [48].This tool addresses the customers' viewpoint on the environment, analyses the behavior, concerns and aspirations, as shown in figure 13.

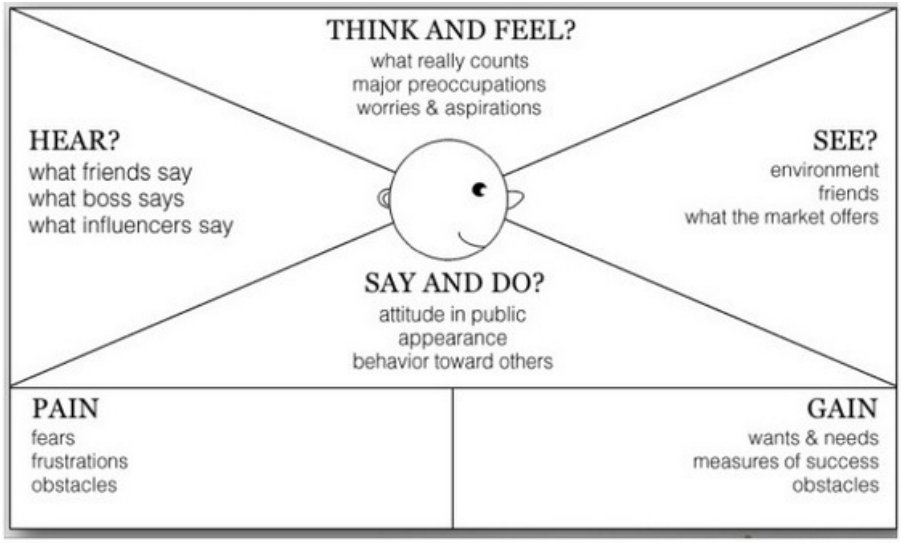


FIGURE 13 EMPATHY MAP [48]

5.1.2.2.2 IPR

As already stated in chapter 4, the problems of the intellectual property arrangements for the innovation projects could be solved by stating in the consortium agreement that all intellectual property will be handed over to the startup after the innovation project ends. All the partners in the innovation project could then also receive shares of this startup, that are based on annual reporting of their commitment and input in the innovation project.

5.1.2.2.3 COMMITMENT

One of the first challenges at the beginning of an innovation project should be to ensure that all partners bring a relevant investment in the project, according to their own incentives and the common goals of the project [93]. This means that the different parties need to collaborate and invest in long-term relationships to overcome barriers in time, place and academic disciplines to create a maximum synergy between all parties. It is also necessary to trigger sufficient trust among the partners and to create an organizational structure with an intelligent performance indicator system to ensure the success of the project [9].

As already stated in chapter 4, if a consortium member puts more financial support in an innovation project, the commitment to reach common goals is higher. In order to be able to transform the innovation project into a startup, it is necessary that not only the financial commitment for each year is set out in the Partner Grant Agreements with Climate-KIC, but also a commitment for the launch of the startup should take a center role. Who is responsible for financial support after the innovation project ends if the startup cannot be a self-sustaining business yet? A plan should be set up on how this startup will be financed and which partner will be responsible for the search of investors, paying customers, grants, etc.

5.1.2.2.4 SALES

It is important to create a self-sustaining business. So before creating the innovation, the team should think about if customers are going to pay for the innovation? How can revenues be created? It is important to create something the market is going to pay for.

A plan in the beginning of the innovation project is necessary to determine when to start selling to customers. In order to be a self-sustaining business, it is necessary to already have customers before the transformation into a startup occurs, in order to bear the startup costs.

5.1.3 JUSTIFICATION

The KICs FIT ME model could be a suitable business model template for the research industry collaboration of Climate-KIC innovation projects. It handles the problems that currently appear in the transformation of Climate-KIC innovation projects into startups and has a positive effect on this transformation.

This model is therefore more suitable than the Osterwalder business model canvas, since the Osterwalder canvas does not include the entrepreneur and also does not include the focus on the research and industry collaboration in the commitment and intellectual property rights problem points. However, these problem points do have an important impact on these innovation projects and the transformation into a startup. The business model template could also be used for innovation projects within the other KICs, since these are formed on the same base of partnerships and funding as Climate KIC. Next to this, the designed template could provide a base for other research projects where research and business collaborate together to form a startup.

5.2 VALIDATION OF THE KICS FIT ME MODEL

Eurbanlab is a Climate-KIC innovation project that deals with the challenge to accelerate innovative developments within urban areas to achieve low carbon, sustainable and resilient cities [16]. According to Eurbanlab (2013), there is estimated that cities account for at least 70% of global carbon emissions. From this amount, buildings are responsible for 40% of the emissions, which is caused mainly due to the energy inefficiency of existing buildings. This is why it is important to retrofit these buildings and implement energy efficient measures for new buildings. The other 30% of the emissions is caused by transport and mobility systems, that are in need of sustainable redesign. In order to implement these measures and tackle problems within urban areas on a large scale, Eurbanlab has developed a framework to guide cities to sustainability through systemic urban innovations [94].

For this purpose Eurbanlab created a unique assessment tool that has the possibility to evaluate the impact of a project on different aspects of People, Planet, Profit and two additional P's that stand for process and propagation. In this way there can be evaluated if a certain project can be done on another European location. Next to this tool, the Eurbanlab project holds a library with urban innovations all over Europe as a source of inspiration and also offers members the opportunity to learn from each other and discuss urban innovations in the community that consists of different parties all over Europe.

Eurbanlab as an innovation project will be terminated at the end of 2014, but has the ambition to be transformed into a self-sustaining social enterprise. To validate the KICs FIT ME business model, first the five building blocks are discussed to see how they have been set up at the beginning of the project and the evaluation of these buildings blocks afterwards. Next, the different problem points of the model are discussed to see if they also have an impact on the Eurbanlab case. The end of this paragraph provides practical implications of the use of the KICs FIT ME model. This validation is written based on the data collected from archival documents and participant observation.

5.2.1 FINANCE

Besides the funding that Climate-KIC provides, the different partners all signed a partner agreement with Climate-KIC for the KIC Added Value Activities and the KIC Complementary Activities they were going to put in the first year.

Two focal points that went wrong are that some partners declared personnel hours as KAVA without actually adding value to the project and some partners also put in less KAVA as planned; apparently without consequences since the Partner Grant Agreement for the next year was still signed.

5.2.2 INNOVATION

In the beginning there was not a concrete innovation idea, more a general idea to solve the problem of climate change in the places where it is the biggest problem, being cities. This without reinventing the wheel and facing the problems of unknown outcomes of potential solutions and solving the problems of trust between involved stakeholders.

The tool that eventually came out is called B4U; benchmark for urban innovations; a tool that has the possibility to score urban innovations on different aspects of People, Planet, Profit, Process and Propagation. The unique aspect is that it is possible to predict if certain projects can be done in other cities. The services next to this are a library that holds urban innovations as an inspiration for future building projects, advice to execute urban innovations and the possibility to join a community to solve questions for urban innovations together. The goal of the innovation project of creating a climate relevant solution is hereby successful.

5.2.3 TEAM

The team was set up by people that found each other based on the network opportunities from Climate-KIC and they found the idea an interesting topic to work on together.

Some original team members left the project, since the development direction was not how they had it in mind at the beginning of the project. If the idea would have been more concrete in terms of the innovation, this might not have happened.

Another interesting aspect that comes to light here is the role of the project lead. How can the project lead take actions if they do not have any authority to take actions, but only the strength of personal leadership? It is also quite concerning that every year agreements are made within the consortium on how the Climate-KIC allocation will be divided between the different partners. However, it is not transparent to the project lead for which budget each partner applies for the Partner Grant Agreement with Climate-KIC and maybe other amounts than agreed on internally are signed. The project lead used to have insight in this and used to approve this before the PGA's were signed, but nowadays this is not the case anymore.

5.2.4 MARKET

In the beginning the target markets were the cities, but it was not yet clear who the actors within the cities were.

The project started in the end of 2011 and customer journeys to discover customers were only set out in 2013, which means that the customers were involved in a very late stage.

5.2.5 ENTREPRENEUR

In the proposal phase of the innovation project, an entrepreneur was not included in the project.

One and a half year after the start of the project, there was decided to try to find an entrepreneur to commercialize the project in a startup. Eventually is decided to hire two entrepreneurs with a large network and experience to lead the startup. However, it costs a lot of time to familiarize the entrepreneurs with Eurbanlab and the risk occurs that they do not have enough ownership feeling to stay in the startup. It would also been valuable to have them in the beginning of the project, since they bring in real market focus, which could have had a positive effect on the market search for Eurbanlab.

5.2.6 KEY VALUE

Since there was no concrete innovation and no concrete market, it was impossible to define the key value in the beginning of the innovation project. However, two potential clients were involved in the innovation project as partners from the beginning to work on this key value. Two potential clients were not enough, since they were both governmental bodies and thus represented only a quarter of the potential customers, because Eurbanlab wants to address more client groups. These clients were also from the same country and since Eurbanlab is a European project, potential clients from more countries should have been involved.

Although the concept is interesting for potential clients, the question remains if these products and services really solve a key problem point for a customers. Other potential customers were addressed in a later stage where the products and services were already formed for the biggest part, making it harder to change them according to the desires of the potential customers. The products and services are all very well developed, but because there are so many possibilities to profit from the Eurbanlab project for potential customers, there is too less focus and it is sometimes unclear for potential customers what Eurbanlab does. A good pitch can help the Eurbanlab project to attract potential customers and they are working to improve this.

5.2.7 IPR

In the beginning the standard Consortium Agreement was signed after a negotiation that lasted six months. However, there were already informal agreements made about the idea to transfer the intellectual property to a potential startup after the innovation project.

Now that Eurbanlab is ready to be transformed into a startup, the intellectual property needs to be transformed to the startup. Although these agreements were already made in the beginning, this was not a formal agreement, so this can still be an obstacle for the actual transformation.

5.2.8 COMMITMENT

There were no agreements made in the beginning of the Eurbanlab project regarding financial support of a possible startup after the termination.

It is not sure how the financial structure will look like when the innovation project ends in December 2014. Hopes are that by then the revenues created by paying customers are high enough to support the startup. However, if this is not the case, it is not sure what will happen with the created tool and services, since no agreements were made in the beginning of the project to foresee this situation. Now the different partners have to decide at the end of the project if they want to invest in the startup. If these decisions would have been made before the project started, the commitment of the partners would have been higher to make the startup a success and this uncertain situation could have been averted. However, it is questionable if partners will actually make risky commitments like this in the beginning of a project. It is important to think about this before the innovation project starts and to make a plan for potential investment.

5.2.9 SALES

Since there was no concrete innovation and no concrete market it was impossible to define sales models in the beginning of the project.

By now, potential sale models are made for the Eurbanlab services, but it is still uncertain if people will want to pay for these types of services. There are already paying customers, however are these ones enough to create a self-sustaining startup?

5.2.10 PRACTICAL IMPLICATIONS

The Eurbanlab innovation project does support the practical use of the KICs FIT ME model, since it captures the problems that Eurbanlab is facing in becoming a startup. More research on other innovation projects is needed to support the validity. Within the scope of this research it was only possible to perform one test case.

The Eurbanlab case provides new interesting opportunities for the Climate-KIC regulation to influence the transformation of an innovation project into a startup. The fact that the Partner Grant Agreement for some partners was signed again for the next year even though they did not bring in all the KAVA that was agreed on, asks for stronger measures from Climate-KIC and could also be a potential threat for the concept of innovation projects and the commitment of the partners of an innovation project. Since Eurbanlab was found eligible to start off as an innovation project without having a concrete idea for a solution and a target market to address, maybe these criteria should be examined again. Eurbanlab could have better started as a Pathfinder project to see if there was market potential and to start developing the innovation to fit the needs of the market. In that way the problems that Eurbanlab is facing now in terms of finding potential customers, getting their value proposition clear and creating potential sales models, would not have been there.

The fact that the entrepreneur was involved is a later stage of the project is also felt as a missed opportunity; since more market knowledge would have been in the project and better steering would have been possible. Another point of attention that the Eurbanlab project brings to light is the authority of the project lead; it is important to have a good project lead to manage the innovation projects, but if they do not have any power to intervene when things go wrong, what is then the actual value?

5.3 Implementation of the KICs FIT ME model

In order to implement the KICs FIT ME model in the Climate-KIC organization as a business model template for Climate-KIC innovation projects, this chapter discusses the implementation plan. This explains the objective of the business model template, specifications of the template, a stakeholder analysis with a resistance analysis to the planned actions for each stakeholder group, the timing of the actions to be taken and the people that are involved in the change process, success measures and a conclusion.

5.3.1 Objective

The objective of using the created KICs FIT ME model as a business model template for Climate-KIC innovation projects is to facilitate the transformation from Climate-KIC innovation projects into startups in order to reduce the current commercialization issues of innovation projects. In the current situation the Climate-KIC regulation only has the Climate-KIC eligibility criteria and quality criteria that need to be fulfilled in order to be selected to perform an innovation project. The KICs FIT ME model addresses the problem points that innovation projects are currently facing in the transformation into a startup. This business model template is therefore more suited than the current alternative of no business model, since it contributes to a solution for the commercialization issues that innovation projects are currently facing by not always reaching marketable products or services.

5.3.2 Specifications

The KICs FIT ME model is already specified earlier in this chapter. The model consists of five building blocks and four important problem points that represent the problems innovation projects are currently facing in the transformation into a startup. The five main building blocks are: Finance, Innovation, Team, Market and Entrepreneur. The four problem points are: Key value, IPR, Commitment and Sales.

5.3.3 Stakeholder analysis

The key stakeholders that need to be dealt with are the Climate-KIC organization as a whole, the business developers for Climate-KIC innovation projects, the Climate-KIC partners and Climate-KIC students. The stakeholders with the according actions are visualized in figure 14.

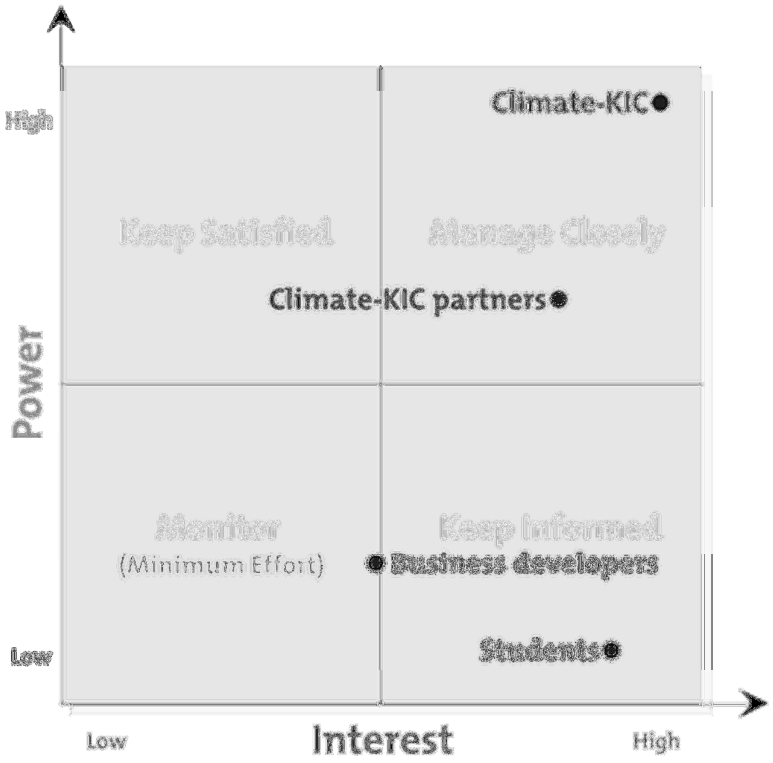


FIGURE 14 STAKEHOLDER ANALYSIS

The Climate-KIC organization is the most powerful stakeholder with the highest interest. This is the organization that ultimately decides whether this model can be implemented or not. They have a high interest, since they want to reach the goals of the innovation projects to commercializing new products and services. A possible solution that reaches these goals can be really interesting for them. The resistance they can provide in implementing this model consists of a difference in opinion, lack of trust and a low willingness to change. Climate-KIC can have a different opinion on the need for this business model template. They could argue that the organization is so young that it is hard to really evaluate the transformation possibilities of Climate-KIC innovation projects into startups and that there is no need for this business model template. The resistance can also consists of the lack of trust in the template since it is not yet tested on a larger scale. The last resistance could be a low willingness to change, because in the opinion of Climate-KIC they have been doing fine without such a detailed model, so why should they want to change the situation? The resistance reasoning however does not fit an organization that has the goal to promote innovation. Within this goal organizational innovation should also be addressed.

Other powerful stakeholders with a relative high interest are the partners of Climate-KIC. Since they form the consortia for innovation projects, they are the ones that actually need to use the template. They have a medium high power since the use of this template could have a negative impact on the willingness of partners to collaborate in innovation projects. This forms a problem if a huge group of partners resists to participate in Climate-KIC innovation projects. The types of resistance from the Climate-KIC partners are a low willingness to change and conflicts of interest. The low willingness to change is due to the fact that using this business model to form innovation projects demands more time and effort.

This without the guarantee to be elected by Climate-KIC from the call of innovation projects. The conflicts of interest consider the hidden agendas of some partners that have other incentives in joining an innovation project. With the created business model template, their incentives become too visible.

The business developers from Climate-KIC innovation projects have a medium interest. They support the entrepreneur within the innovation project where necessary and can stimulate awareness among the partners of the importance of the template. They have low power, since they cannot implement the template. Their resistance can be a difference in opinion, since they are experts in the startup field, it is possible that they do not see the value of the created business model template.

The students from Climate-KIC or other people that will be appointed as the future entrepreneurs of the startups formed out of the innovation projects have a high interest. Since the use of this template could mean that they are involved in a project, which they have to lead after a few years. Their power is low, since they have no means to influence the implementation of the business model template. The resistance they can face is the low willingness to chance, since they are afraid of the unknown and find it fun, but also challenging to be involved as an entrepreneur in the innovation projects.

5.3.4 Timing

The project proposal for Climate-KIC innovation projects for 2015 already ended in April 2014. Since the call for innovation project proposals is only once a year, the next round will be around April 2015. This gives Climate-KIC the time to explore the possibilities of the KICs FIT ME model. It could be implemented as a test project into the next generation of Climate-KIC project proposals. Before that time, Climate-KIC could promote this tool among the partners, ask for feedback and inform the partners about the goals of the tool and the benefits that they could receive from using it. In the first round for the project proposal phases for 2016, this tool could be evaluated mildly and the criteria can be soften a little to receive acceptance of the template. In the first year Climate-KIC should already be able to see the benefits of the model in the innovation projects where it is applied in the right way. After the first generation of innovation projects that used this template, feedback should be incorporated in the further development of the business model template and the effect on the transformation of the innovation projects into startups should be evaluated.

5.3.5 Success measures

It is important to examine if the KICs FIT ME model in the project proposal phase really has a positive influence on the transformation of Climate-KIC innovation projects into startups. To measure if the model is successful, it should be used in a new generation of innovation projects. When the innovation projects end, there should be analyzed if these innovation projects really transformed into startups and how many of them turned into startups. It is also valuable to examine if there no startup after the termination of the innovation project, rather the created products and services are commercialized in another way, since this is then also seen as a successful innovation project.

If the created products and services do not reach the market, one should examine if this is due to limitations of the KICs FIT ME model, or other problems that after evaluation may also find a place within the template.

5.3.6 Conclusion

The implementation of the KICs FIT ME model in the Climate-KIC organization as a business model template for Climate-KIC innovation project can be done relatively easy. There is time enough to brief the partners of the organization on how this model works and what the purpose is. However, it does consist out of hard criteria that need to be fulfilled, which might have a negative impact on the willingness of partners to participate in an innovation project. On the other hand, if all the criteria are met, logically the partners have a higher commitment in reaching the goal of commercializing new products and services, which implies that this model is good to test the incentives of the partners.

5.4 Conclusion

The KICs FIT ME model could be an appropriate business model template for the research industry collaboration of Climate-KIC innovation projects. It handles the problems that currently appear in the transformation of Climate-KIC innovation projects into startups and thus has a positive effect on this transformation. The Eurbanlab innovation project does support the practical use of the KICs FIT ME model, since it captures the problems that Eurbanlab is facing in becoming a startup. More research on other innovation project is needed to support the validity. Within the scope of this research it was only possible to perform one test case. The implementation of the KICs FIT ME model in the Climate-KIC organization as a business model template for Climate-KIC innovation project can be done relatively easy. There is time enough to brief the partners of the organization on how this template works and what the purpose and value is for all the stakeholders.

6 CONCLUSION

Innovation is the key to economic growth and social well-being in the global knowledge economy we live in. The capacity of a society to innovate is crucial to compete on a global scale to solve emerging societal problems in this economy. In order to stimulate the development of innovations, Europe is facing a challenge to change the mind-set towards promoting an innovative and entrepreneurial culture. Despite excellent research institutes and dynamic companies, good ideas rarely reach the market in the form of new products and services. To stimulate the creation and commercialization of innovations and encourage entrepreneurship, the European Union has set up the European Institute of innovation and Technology (EIT) in 2008.

This institute is funded by the European Union and brings together leading knowledge institutes and companies to form dynamic cross-border partnerships to develop innovative products and services, start new companies and train tomorrow's generation of entrepreneurs. These partnerships form Knowledge and Innovation Communities (KICs) and are set up around key societal needs, being climate change mitigation (Climate-KIC), renewable energy (KIC Innoenergy) and the next generation of information and communication technology (EIT ICT Labs). Each of these communities is funded by the EIT to bring research, business and education together to work on the commercialization of new products and services. This can be done through the formation of new startups or with innovation projects, which consist of a collaboration between research and business partners that develop innovations together for a limited amount of time and launch these to the market.

However, there are no rules on how the commercialization of these products and services created in innovation projects needs to be done. It is therefore possible that these products or services are not commercialized and that the goal of these projects is not reached. This is not sustainable and in that case the funding from the EIT could have been better spend on other innovation projects. There is a need for a solution to prevent that the innovations created within these projects 'land on the shelf'.

Climate-KIC has recognized that the challenging transformation from innovation projects into startups could be an opportunity to solve this problem. It is therefore interesting to discover what the role of the Climate-KIC regulation could be in solving the problems these transformations are currently facing. Since the successful commercialization of products and services is dependent on a suitable business model, the role of business models could also have an effect on this transformation.

This research points out that the Climate-KIC regulation still has room to improve in order to facilitate the transformation of innovation projects into startups. Interviews with innovation project managers, startup entrepreneurs and business developers of the three KICs form the base of the exploration of opportunities for Climate-KIC.

The regulation of partnerships, intellectual property right administration, project funding and the lifetime of the innovation projects have room to change in order to influence the transformation of Climate-KIC innovation projects into startups. The current Climate-KIC partnership regulation does not always include organizations with relevant specialized knowledge to create new products or services as a partner of innovation projects. This has an influence on the transformation into a startup, since new products or services form a commercialization base of a startup. Most of the times the specialized organizations are SME's with limited financial means. An opportunity to involve these parties in innovation projects could be to create a funding program to support the SME's to develop the innovation. To middle out the financial investment of the other partners of the innovation project, they could receive shares on the developed innovation.

The Climate-KIC intellectual property regulation has an influence on the transformation of innovation projects into startups, because this regulation can hinder the commercialization of new relevant products and services, which is the base for a startup. An opportunity to solve this is handing over all created intellectual property to the startup that is formed after the termination of the innovation project. All the partners from the innovation project consortium would then receive shares of this startup. These shares are based on the commitment of each partner and input in the innovation project.

For the funding regulations another system can be used that is much more attractive for Climate-KIC, as well as for the partners. Instead of refunding partners for worked personnel hours, travel and accommodation costs, the funding should be based on deliverables. If the partners are fully responsible for these overhead costs and are being paid for delivered quality instead of the worked hours, the quality of the innovation will be higher for Climate-KIC, also meaning higher potential revenues for the partners. This has a positive effect on the transformation of innovation projects into startups, since this delivers higher quality products and services that can be commercialized.

The lifetime of an innovation project represents the time that the consortium partners of an innovation project have to develop new products or services. It is not always viable to create innovations that are ready to be commercialized within the scope of an innovation project. This has a negative impact on the transformation into a startup. To ensure viable products or services, the innovation projects should be proceeded by Climate-KIC pathfinder projects. These projects cost significantly less than the innovation projects and are created to investigate whether there is a market demand for the innovation in question. If there is no market demand, the project can be terminated without wasting valuable EIT funding.

Another opportunity for Climate-KIC to influence the transformation of innovation projects into startups in a positive way, is implementing the designed 'KICs FIT ME' business model template for innovation projects. This template deals with the problems that the innovation projects currently face in the transformation into startups. It consists out of five building blocks and four important problem points that need to be addressed in the project proposal phase of an innovation project. To comply with the business model template, the consortium for an innovation project should form a solid team that holds sufficient financial means to create an innovation. This innovation needs to be based on an idea that addresses a need of the market and creates value of the customers, in order to generate revenues.

The intellectual property rights of the created innovation should be handed over to the startup after the termination of the innovation project and the partners should receive shares of the formed startup. The partners should also make a commitment to ensure that the startup can be economically self-sustaining when the innovation project terminates. The center of the business model template is an entrepreneur. This should be someone that has marketing skills, technical knowledge, as well as financial knowledge and this person should be a part of the innovation project team. The skills that this person lacks can be improved during the course of the innovation project by learning from experts and business coaching. In this way the entrepreneur is ready and motivated to lead the startup after the innovation project ends.

The created business model template is tested on the Eurbanlab case and shows the practical value of the template. If this template had been used in the project proposal phase of Eurbanlab, it could have solved the problems that Eurbanlab is currently facing in becoming a startup. This template needs more testing to prove the practical implications, however the usage of the template could increase the transformation possibilities of innovation projects into startups. In this way it contributes to the commercialization goals of innovation projects and therefore the EIT funding can be used in a more sustainable way.

7 DISCUSSION

Transforming Climate-KIC innovation projects into startups is a challenging solution for the problems that innovation projects currently face, regarding the commercialization of new products and services. The Climate-KIC regulation currently has a negative influence on this transformation, due to restricted partnership regulations, intellectual property right administration, grant funding guidelines and lifetime regulation of these innovation projects. The KICs FIT ME business model that is designed within the scope of this research can be seen as an appropriate business model for the research and business collaboration in Climate-KIC innovation projects. This business model has a positive influence on the transformation of Climate-KIC innovation projects into startups, since it addresses problems that the innovation projects are currently facing in the transformation. Climate-KIC innovation projects are publically funded collaborations between research and industry partners for a limited amount of time. Since the innovation projects of KIC Innoenergy and EIT ICT Labs are based on the same characteristics, the KICs FIT ME model can be generalized for this purpose and can also be used for these innovation projects.

The contribution of this research is two folded. First it provides an appropriate business model template for research and industry collaboration, for which little empirical research is done [19]. This is important since an appropriate business model for these types of collaboration is of key importance to commercialize innovations. The public funding of research and industry collaborations have a positive influence on technology commercialization [13], causing an increased interest in Europe to fund these types of collaborations. However it is unknown how the regulation of European funding organizations can improve the rate of technology commercialization [14]. The second contribution of this research is therefore the definition of opportunities for the Climate-KIC regulation that influence the transformation from innovation projects into startups. This is legitimate since Climate-KIC innovation projects are publicly funded research and business collaborations and a startup involves the commercialization of technology.

The limitations of this research are related to the data collection. A point of concern while conducting interviews, are interview biases. In this research they are limited to a minimum. To deal with the sampling bias, which occurs when a certain type of respondents is omitted or included, this research includes respondents from three different target groups to get a broader insight. The measurement bias, that can be caused by respondents that refuse to give socially unaccepted answers or are afraid to answer the questions honestly is omitted by telling the respondents that the interviews are treated anonymous and to imply that it is important for the research to answer the questions according to the real situation. The interviewer bias can exist due to the fact that the interviewer influences the respondents with the interview questions and attitude. To prevent this the interviews were constructed with an interview guide that was reviewed by the supervisors and the interviews were prepared by asking expert advise on how semi-structured interviews are conducted. During the interviews a neutral attitude was formed while asking the questions. The response bias of participants is dealt with by only giving a short introduction of the research. When the participants feel they understand the research and the expected finding, they could give answers that match their believes of the expected findings.

The data was only analyzed after all the interviews were done, so that the questions that were asked to the interviewees were not influenced by the results from the previous interviews.

While conducting the research, the difference between the formal and informal organization of innovation projects becomes quite clear and it was not easy to include this in the analysis. The influence of this issue is addressed in the Eurbanlab test case to validate the KICs FIT ME model, but is not used as a base of the analysis. The organization of Climate-KIC that is described in the documents that are used as a base of the analysis only give a view on the formal organization. The influence of the informal organization could have been addressed more in the interviews, however this is a sensitive point for the interviewees and could have influenced the respondents to not give honest statements on the other questions. The informal organization does play a significant role in the daily management and things go very different than on paper. However, the formal organization should form a solid base for these projects and is therefore used as a base for this analysis.

Further research would be to examine the practical value of the KICs FIT Me model for Climate-KIC innovation projects and to test if this model has a positive outcome on the transformation of innovation projects into startups and thus on the commercialization of these new technologies. The commercialization through a startup is not the only commercialization option and forming a startup is not a specific goal for these innovation projects. It would therefore also be interesting to explore other options, like having the commercializing partner within the project consortium or licensing the intellectual property to Climate-KIC, who can then chose a partner or startup to commercialize it. The influence of the formal and informal organization within the KICs might also be a challenging topic to explore, due to the statements of the different interviewees regarding the importance of this subject. A last interesting topic to examine is the viability of the KIC organizations, since it is alarming that Climate-KIC has to cut costs due to increasing debts. How does this influence the future of the organization and what is a sustainable solution to solve this challenging financial burden?

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APPENDICES

APPENDIX INTERVIEW GUIDE

Interview KIC Start up

Introductie

- Mijn naam is Nathalie Kerstens en ik ben momenteel bezig met mijn afstudeeronderzoek aan de Technische Universiteit Eindhoven, als afstudeerder bij ARCADIS voor het Eurbanlab innovation project van Climate-KIC.
- Ik wil graag de overgang van KIC innovatieprojecten richting start-ups vanuit business model perspectief onderzoeken. Hiervoor wil ik analyseren welke factoren tot een succesvolle overgang van innovatie project naar start-up leiden. *'How to create successful business models for startups following upon KIC innovation projects?'*
- Dit interview wordt opgenomen en deze opname wordt enkel intern gebruikt voor mijn onderzoek.
- De uitwerking van dit interview worden naar u opgestuurd voor validatie en staan open voor feedback.
- De geschatte tijdsduur van dit interview is 45min.

Achtergrond van de geïnterviewde

- Kunt u zichzelf even kort voorstellen, inclusief hoe u terecht bent gekomen bij KIC?

De start up

- Kunt u de start up even voorstellen en vertellen welke producten of services aangeboden worden en welk problemen deze aanpakken?
- Hoe is het idee voor de start up tot stand gekomen?
- Welke partijen zijn er bij betrokken (van begin tot einde) en hoe is de samenwerking?
- Welke uitdagingen en obstakels heeft de start up al overwonnen en welke worden nog verwacht?
- Welke rol speelt KIC in de start up?

Business Model

Ontwikkelingsproces

- Welk business model gebruiken jullie en kan u het ontwikkelingsproces ervan in de tijd schetsen?
- Welke partijen zijn er bij de business model ontwikkeling betrokken?
- Gebeurt evaluatie van het business model structureel, hoe, en wat is de toekomstvisie qua wijzigingen aan business model (innovatie)?

Duurzaamheid

- Wat maakt volgens u het business model duurzaam en waar zitten zwakke punten?
- Hoe wordt er met risico's omgegaan?

Financiën

- Hoe wordt de start up gefinancierd?

- Hoeveel procent van het kapitaal is ongeveer geïnvesteerd in het ontwikkelingsproces van het business model?

Klanten
- Hoe zijn de klanten bepaald voor de producten/services en hoe zijn deze betrokken bij de ontwikkeling hiervan?

Concurrentie
- Op welke manier wordt er rekening gehouden met de concurrentie?

Entrepreneur
- Wat zijn de kenmerken van een geschikte persoon voor een start up?

KIC
- Welke invloed heeft KIC op het business model van het project?

Conclusie
- Wat zijn volgens u succesfactoren voor een start up?
- Zijn er nog belangrijke dingen die u wilt meegeven, die we niet hebben besproken?
- Kent u nog andere mensen om te interviewen in kader van dit onderzoek?

Interview KIC innovation projects

Introductie
- Mijn naam is Nathalie Kerstens en ik ben momenteel bezig met mijn afstudeeronderzoek aan de Technische Universiteit Eindhoven, als afstudeerder bij ARCADIS voor het Eurbanlab innovation project van Climate-KIC.
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- De uitwerking van dit interview worden naar u opgestuurd voor validatie en staan open voor feedback.
- De geschatte tijdsduur van dit interview is 45min.

Achtergrond van de geïnterviewde
- Kunt u zichzelf even kort voorstellen, inclusief hoe u terecht bent gekomen bij KIC?

Het innovatie project
- Kunt u het project even voorstellen en vertellen welke producten of services in ontwikkeling zijn en welk problemen deze aanpakken?
- Hoe is het idee voor het project tot stand gekomen?
- Welke partijen zijn er bij het project betrokken (van begin tot einde) en hoe is de samenwerking?
- Wat brengen deze partners in in het project?
- Welke rol speelt KIC in het project?
- Komt dit project tot een uiteindelijke start up en zo ja waarom wordt hiervoor gekozen en geen andere optie?

- Wat gebeurd er met de producten/services indien er geen start up zou komen?

Business Model

Ontwikkelingsproces

- Welk business model gebruiken jullie en kan u het ontwikkelingsproces ervan in de tijd schetsen, ook voor een eventuele start up?
- Welke partijen zijn er bij de business model ontwikkeling betrokken?
- Gebeurt evaluatie van het business model structureel, hoe, en wat is de toekomstvisie qua wijzigingen aan business model (innovatie)?

Duurzaamheid

- Wat maakt volgens u het business model duurzaam en waar zitten zwakke punten?
- Hoe wordt er met risico's omgegaan?

Financiën

- Hoe wordt het project gefinancierd (en eventueel de toekomstige start up)?
- Hoeveel procent van het kapitaal is ongeveer geïnvesteerd in het ontwikkelingsproces van het business model?

Klanten

- Hoe zijn de klanten bepaald voor de producten/services en hoe zijn deze betrokken bij de ontwikkeling hiervan?

Concurrentie

- Op welke manier wordt er rekening gehouden met de concurrentie?

Entrepreneur

- Wie heeft nu de leiding binnen het project en wat zijn de kenmerken van een geschikte persoon voor de (eventuele) start up?

KIC

- Welke invloed heeft KIC op het business model van het project?

Conclusie

- Zijn er nog belangrijke dingen die u wilt meegeven, die we niet hebben besproken?
- Kent u nog andere mensen om te interviewen in kader van dit onderzoek?

Interview Business Development

Introductie

- Mijn naam is Nathalie Kerstens en ik ben momenteel bezig met mijn afstudeeronderzoek aan de Technische Universiteit Eindhoven, als afstudeerder bij ARCADIS voor het Eurbanlab innovation project van Climate-KIC.
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- De uitwerking van dit interview worden naar u opgestuurd voor validatie en staan open voor feedback.
- De geschatte tijdsduur van dit interview is 45min.

Achtergrond van de geïnterviewde

- Kunt u zichzelf even kort voorstellen, inclusief hoe u terecht bent gekomen bij KIC?

innovation projects

- Waaraan moet een project voldoen om innovatie project te worden?
- Hoe verloopt de samenwerking tussen de verschillende partijen binnen een innovatie project?
- Wat is de rol van MKB's binnen deze innovatieprojecten? Kunnen deze ook in een partnership komen en waarom wel/niet?
- Hoe groot is volgens u de potentie om innovatie projecten te transformeren in start ups?
- Wat gebeurd er met de producten/services die ontwikkeld zijn in een innovation project maar die niet op de markt komen?
- Wat is de rol van KIC binnen innovatieprojecten?
- Hoe kan KIC zijn rol hierin verbeteren?

Start ups

- Aan welke criteria moeten een idee/project voldoen voor KIC om een start up te worden?
- Wat zijn volgens u succesfactoren voor een start up?
- Wat zijn de voornaamste redenen dat een project niet tot start up komt?
- Wat is de rol van een goed business model en wat is een goed business model?
- Wat is het profiel van de ideale persoon om een innovatie project naar een start up te leiden?
- Wat is de rol van KIC voor start ups?
- Hoe zou KIC zijn rol hierin kunnen nog kunnen verbeteren?

Conclusie

- Kunt u mij meer informatie bezorgen over de vereisten vanuit KIC voor innovatie projecten en start ups?
- Zijn er nog belangrijke dingen die u wilt meegeven, die we niet hebben besproken?
- Kent u nog andere mensen om te interviewen in kader van dit onderzoek?

APPENDIX OPEN AND THEORETICAL CODING

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APPENDIX CLIMATE-KIC PARTNERSHIPS

Tag	Quote	Source
SME's	"Samenwerken dat vinden ze allemaal leuk. En als ik zeg van "We kunnen een klein beetje geld uit de Climate-KIC pot halen", vinden ze ook leuk. Maar als ik zeg van "Dit is mijn idee maar wil je 100.000 Euro investeren in de wetenschap, "Doei!" Dat is in eerste instantie de reactie. En zeker bij die MKB-bedrijven. En ik vraag me af of **Climate-KIC dat goed in de gaten heeft, dat dat soort bedrijven juist het meest innovatief zijn, die willen dingen ontwikkelen, maar er zijn ook bedrijven die eigenlijk geen cent te makken hebben.** Dus de hele organisatie zoals Climate-KIC het nu heeft opgezet, wat je eigenlijk ook ziet in het topsectorenbeleid, is gericht op het creëren van business. Waarbij MKB altijd een belangrijke poot is. Maar **die bedrijven hebben eigenlijk te weinig financiële mogelijkheden om in dit soort trajecten te stappen.** Dus die zou je extra of op een andere manier moeten stimuleren."	innovation project manager Climate-KIC
SME's	"Het wegvallen van bijvoorbeeld een MKB-bedrijf, dat ligt veel gevoeliger. Die willen naar die innovatie. En **die bedrijven die mogen daar best in participeren, maar financieel krijgen ze maar een heel klein aandeel.** Als we naar de innovation toegaan dan wordt hun aandeel aanzienlijk groter. Omdat hun belang groter wordt, en niet alleen voor het project maar ook voor Climate-KIC. Zo zie ik al die constructies zoals ze nu lopen, **met inderdaad een probleempje als die innovatieve kleine bedrijven zouden weggaan. Want die heb ik niet zomaar. Grote wel."**	innovation project manager Climate-KIC
Restricted partnerships, SME's	"**SME's kunnen wel deelnemen maar zijn geen partner**. De partners, bepalen eigenlijk de consortia, de doelen, en daar binnen is er een mogelijkheid om SME's aan te trekken. Maar die zijn nog niet echt partner, in de zin van... Een partner is een officiële contract, zij zijn dan zeg **maar onderaannemers**, zou je kunnen zeggen. Die worden dan gevraagd om een bepaalde taak in te vullen. En er zit ook **een beperkt budget aan** om dat te doen, dus dat kan niet te hoog zijn, omdat je... dat heeft ook allemaal met regels te maken."	Business development EIT ICT Labs
SME's	"**MKB's, omdat dat net de commercialiserende partijen zijn**. Enerzijds zijn zij net de **commercialiserende partijen, dus daarvoor is er een perfecte stroming en die technology transfer loopt heel goed vanuit de kennisinstellingen**, samen met een groep van MKB'ers, om tot een punt te komen. Dus dat loopt enorm goed. Het enige wat we daar zien is dat **een MKB vaak typisch een relatief beperkte geografische scope heeft, achteraf, en ook relatief beperkte financiële middelen om dan effectief voldoende snel te groeien. Dus vandaar dat we nu ook aan het kijken zijn om enkele grote partijen er mee aan te sluiten**."	Business Development KIC InnoEnergy
SME's	De **MKB's zijn of vaak zelf de innovator of die proberen we te koppelen aan het research programma van de KIC EIT ICT**	Business Development EIT

	Labs, of we koppelen ze aan een grotere partner, bijvoorbeeld een Philips of een TNO om daarin samen te werken of we koppelen ze aan een universiteit om samen R&D te doen.	ICT Labs
Sub contracting	Juist het wegvallen van bijvoorbeeld een MKB-bedrijf, dat ligt veel gevoeliger. Die willen naar die innovatie. Die twee bedrijven zijn waarschijnlijk de enige bedrijven in Nederland, en waarschijnlijk in Europa, die zich hier op richten en daar expertise in hebben ontwikkeld. Ik zou niet weten waar ik dat soort kleine bedrijven vandaan zou moeten halen. En dat was ook een van **de vragen bij de accountantscontrole, van "Heb jij een formele onderaanbesteding gedaan?" Dat betekent dus dat je drie offertes ontvangen hebt en op basis van het geld c.q. de kennis een beslissing hebt genomen; nee dat heb ik niet gedaan. Dat heb ik toen ook gezegd, het is heel simpel... Die zijn er niet, dat soort bedrijven.** "Ja, wie zegt dat?" Ja, en dan kom je in een discussie terecht... Waar ik ook niks mee kan. Waarvan ik op een gegeven moment denk: je moet me maar geloven. Ik kan er ook niet meer van maken. En ik wil best die andere bedrijven gaan zoeken, maar ik zou niet weten waar.	innovation project Climate-KIC
Restricted partnerships	"Dus ik had ook bij de Universiteit Groningen kunnen aankloppen. Maar de Universiteit Groningen is **geen lid van de KIC-maatschappij**, dus klop je daar niet aan."	innovation project manager Climate-KIC
Restricted partnerships	"Alles kan in Imperial College uitgevoerd worden en alles kan in Wageningen. **We hebben allemaal min of meer dezelfde apparatuur. De ene groep is wat slimmer dan de andere, maar daar gaat het helemaal niet om.** Je hebt allemaal de kennis en de mogelijkheden om zeg maar dat project Azofast te voeden. Dus daar zie ik helemaal geen probleem. Behoudens dan zeg maar de eventuele financiële consequenties als je niet meer kan samenwerken met Utrecht. Stel dat Utrecht platgebombardeerd wordt, zeg ik morgen nog "Oké, dan gaan we die handel in Wageningen doen." **Maar dat mag niet volgens de voorwaarden van Climate-KIC**, dus dan moet ik ergens anders weer heen"	innovation project manager Climate-KIC
Restricted partnerships, SME's	**"Het zou misschien makkelijker zijn als er een mogelijkheid zou zijn voor MKB-bedrijven, maar ook de grotere bedrijven, om mee te doen in dit soort projecten en trajecten, ook al zijn ze geen Climate-KIC-partner."**	innovation project manager Climate-KIC
Restricted partnership	"Ook omdat wij een open systeem zijn, want ik denk dat **Climate-KIC eerder een gesloten netwerk is waarbij het enkel de eigen partners zijn, dus wij staan open voor alles en iedereen,** dus in die zin hebben we daar wel weer aandacht nodig."	Business development Inno Energy
Restricted partnership, Start ups	"We denken dat we andere denkwijze hebben dan de professionele bedrijven. Die zijn altijd veel slomer, veel logger. En een startup is veel wendbaarder, je kan veel sneller je idee, je businessplan pivotten zodat je toch iets anders kunt doen, of een gerelateerd iets gaat doen. **Dus je kunt veel beter inspelen op de markt als je klein bent."**	Climate-KIC startup

APPENDIX FUNDING FOR INNOVATION PROJECTS

Tag	Quote	Source
KAVA, Travel costs, Personnel costs	**Samenwerken, bijeenkomsten. En ik rijd regelmatig naar Utrecht toe.** Engeland is natuurlijk lastig. Engeland is al wel een keer hierheen gekomen. Dan bespreken we samen de mogelijkheden. **Maar ja, voor dat bedrag, met alle respect, een paar ton, als je dat gaat uitgeven aan reizen enzovoort, dat is zo op. Wetende dat ik bijvoorbeeld 125 Euro, intern tarief, per uur kost. Dus een dag van mij weg is gewoon 1.000 Euro. En dan heb ik nog niks gedaan. Als ik nu naar Engeland toega dan ben ik 1.000 Euro kwijt zonder dat ik eigenlijk een cent verdiend heb.** Dat moet ik dan de volgende dag doen, bij wijze van spreken. Dus het lijkt veel geld maar het is ook allemaal zo op, heb ik wel eens het idee.	innovation project manager Climate-KIC
KAVA, Personnel costs	En dat is misschien soms **voor een universiteit wat minder, die hebben niet te maken met uurtarieven et cetera. Die kijken gewoon naar het salaris en daar zit wat overhead op.**	innovation project manager Climate-KIC
KAVA, Personnel costs	Naast Climate-KIC geld heel veel intern en extern geld tegen aan gaat. **Ja, als het echt hele grote projecten worden dan moet er ook gewoon heel veel tijd en geld besteed worden aan het management.**	innovation project manager Climate-KIC
KAVA, proof	Als **ik jou die getallen laat zien en die stromen dan geloof je het. Maar als je de onderliggende realiteit kent dan zeg je "Oh ja, maar dat hebben jullie eigenlijk nog helemaal niet zo hard aangetoond. Kan dat wel?"** En dat is een beetje waar wij nu ook tegen aanlopen, dat de realiteit eraan komt maar dat er nog steeds bepaalde gebieden niet goed geëxploiteerd zijn.	innovation project manager Climate-KIC
KAVA, proof	Over die zorgvuldigheid, daar zit een heel proces achter van hoe die calls zijn ingericht. Dat zorgt ook voor een... **bureaucratisch wil ik niet zeggen,** maar dat zorgt wel voor geen hoog tempo altijd. Omdat je zorgvuldig met de calls moet omgaan, er moet... er zit nog steeds tijd tussen. Daardoor is de snelheid in sommige gevallen niet heel hoog, maar het gaat wel heel zorgvuldig. Want dingen moeten goedgekeurd worden, iedereen moet kansen krijgen**. En het feit dat het om Europees geld gaat, ons belastinggeld**, betekent dat je er erg zorgvuldig mee moet omgaan. Dat zorgt gewoon dat je op een bepaalde manier dit soort dingen kunt organiseren, maar bepaalde dingen zijn dus gewoon onmogelijk daardoor. Is gewoon lastig. Dus dat is een belangrijk aspect dat meegenomen moet worden altijd. Dus er zit een hele... **Ja, er moet heel wat formulierwerk ingevuld worden. Gewoon om te bewijzen dat je bepaalde dingen wel of niet gedaan hebt en zorgvuldig bent geweest.**	Business Development EIT ICT Labs
KAVA, KCA	Nou, kijk, om zo veel geld gaat het niet, hè? Dus de KIC die betaalt... **Het idee van de KIC is, ze betalen in principe 25% van de kosten. Al is het niet helemaal eerlijk om dat op die manier zo te zeggen want kijk, eigenlijk zijn er heel veel kosten die wij doen aan onderzoek rond klimaat en dat**	innovation project manager Climate-KIC

	soort dingen mogen we opvoeren. Dus op zich, dit project wordt wel 100% bekostigd, maar het is ook weer niet zo dat daar nou een heel projectbureau omheen gebouwd kan worden. Zo veel geld zit er ook weer niet in.	
KCA	Ik moet even goed nadenken want **een deel van die ontwikkelingen zijn wel in het project gedaan, maar die worden niet direct gefund door de EIT** waar wij het geld van krijgen.	innovation project manager KIC InnoEnergy
KAVA, Partner intensions	Mooie financieringsstructuur, met als kanttekening dat men blijkbaar dezelfde kant op wil gaan als Horizon 2020, en dat kan ik niet helemaal overzien of dan de vergoedingen [wel uit] kunnen. Want ik heb een gevoel, ik heb hier laatst **een berekening gezien dat de uurtarieven, met alles erop en eraan, op 80% van de werkelijke kosten komen. Dat betekent dus dat je een verlies hebt op ieder uur van 20%. Gewoon voor je hele project.** De vraag is hoe je daar mee omgaat. Dat maakt het weer lastig, hè? En dat is misschien soms voor een universiteit wat minder, die hebben niet te maken met uurtarieven et cetera. Die kijken gewoon naar het salaris en daar zit wat overhead op. Binnen dit soort kleine projecten is dat geen probleem, maar op het moment dat je het gaat hebben over grote innovation projects die per jaar een half miljoen of meer aan financiering hebben, en je hebt het dan over 20%, dan wordt het absoluut veel geld. Ik weet niet of dat allemaal zo gaat gebeuren, maar dat is een signaal wat ik gehoord heb. Of dat goed is weet ik niet…. zo'n nieuwe **financieringsstructuur waarbij dan je minder krijgt dan het daadwerkelijke uurtarief waarvoor wij moeten werken. Dat zijn wel hobbels, denk ik, die op een gegeven moment een probleem kunnen opleveren.** Want iedereen weet wel hoe je dat zou kunnen aanpakken. **Bij wijze van spreken, ik ben er niet voor en doe het zelf ook niet, maar creatief boekhouden dat kan iedereen.** Maar als je dan helemaal vol zit dan kan je niet creatief boekhouden. Want je kan niet meer uren maken dan je op jaarbasis moet maken. Dus een heel simpel voorbeeld: wij staan voor 1865 of 1870 uur te boek, daarvan moet je zoveel-procent projecturen maken, zoveel-procent acquisitie, zoveel-procent mag je ziek zijn, zoveel-procent vakantie, enzovoort. Voor mij zou het probleem zo opgelost zijn als ik onderbetaald zou worden, dan zeg ik "Oh, ik heb geen 1800 uur gewerkt maar 3600 uur." Er is geen hond die dat gelooft. Je kan het op allerlei manieren aanpakken maar ergens loopt dat spaak. Als iedereen bezet is dan kan je bijna niks.	innovation project manager Climate-KIC
Partner intentions	Ook dat is een criterium: je ziet gewoon **hoe groter het commitment is, hoe minder je gedoe hebt over de financiën.** KIC financiert best wel een groot gedeelte, maar zeker niet alles en de **primaire partners brengen naast hun directe projectfinanciering ook nog complementaire kosten in.** Dat zijn andere projecten, dat weet je denk ik wel vanuit de andere KIC, dat zijn andere projecten die lijken op wat je aan	innovation project manager KIC InnoEnergy

	het doen bent met vergelijkbare technologieën en **dan zie je dat dat ook veel beter loopt. Er is dan duidelijk commitment van de organisatie op financieel opzicht van wij investeren ook, terwijl andere partners met name aan het meeliften zijn om alleen maar subsidies te krijgen.**	
Partner intentions	Maar goed je blijft te maken hebben met financiën. **Financiën is zo'n rode draad; ze komen naar KIC primair voor geld.** Uiteindelijk moet het allemaal betaald worden en nou ja een universiteit die wil gewoon geld hebben voor studenten en een bedrijf wil geld hebben voor producten dus dan heb je niet meer te maken met je eigen projectteamleden, dan heb je te maken met administraties. Dan heb je te maken met de back office van zo'n universiteit, dan heb je te maken met professoren die zeggen: **luister er moet wel geld komen voor het volgende jaar en dan zeg ik als projectleider: ja maar wat lever je dan aan productontwikkeling en dat weten ze dan nog niet precies en dat kan natuurlijk niet. Nou dat vind ik wel een belangrijke bedreiging voor het project maar ook voor het hele concept van KIC.**	innovation project manager KIC InnoEnergy
Attractiveness, Big Corporates	"Maar wat we daar zien is **dat voor de kleinere bedragen waar we nu mee hanteren, dus dan spreken we gemiddeld over anderhalf miljoen funding, dat ze daar niet in geïnteresseerd zijn**. Omdat die grotere bedrijven zeggen van: **ofwel is het echt interessant en doen we het zelf, en als het onvoldoende interessant is dan doen we het niet**. Maar dat is vaak omdat ze daar getriggerd zijn tot die... Als je ziet, we spreken over gemiddeld anderhalf miljoen funding, voor een project dat zo'n drie jaar mag duren, waarbij minimum 3 maximum 7 partners zitten, dus per partner spreken we over enkele honderdduizenden euro's per jaar. Wat voor een groot bedrijf peanuts is en verwaarloosbaar. Dus in die zin begrijpen we heel goed dat ze ook niet geïnteresseerd zijn daarvoor. Maar **vandaar dat we nu ook een nieuwe piste aan het uitwerken zijn om het soort grotere projecten, waar we exclusief spreken over fatsoenlijke aantallen in miljoenen Euro's, om net daar ook de aansluiting te vinden met de big corporates en niet enkele MKB'ers**."	Business Development KIC InnoEnergy
Attractiveness, Big corporates	"Die technologische validatie van die kennisinstellingen. Voornamelijk zien we dat... Enfin, dan spreken we over de grotere bedragen, om die partijen, de big corporates, geïnteresseerd te krijgen. En het moet voldoende risicodragend zijn, want als het te laag risicodragend is dan doen die partijen dat typisch zelf. Nog altijd. Dus in die zin zijn we daar eerder op zoek naar de 'silver bullet' die heel risicodragend, maar een grote paradigma shift kunnen teweegbrengen." "Daar proberen we zoveel mogelijk aan hun kan te vragen en te zien van, die big corporates, daar zijn er ook maar enkele binnen de energiesector die het netwerk hebben. We proberen voornamelijk met hun samen te zitten, "Welke ideeën heb je waar we rond over kunnen werken?""	Business development Inno Energy

APPENDIX LIFETIME OF AN INNOVATION PROJECT

Tag	Quote	Source
Startup	Dus in de **looptijd van het Climate-KIC innovation traject is het heel moeilijk om een bedrijf op te starten,** is mijn inschatting. Het kan wel werken als je een bedrijf meeneemt, dus wat wij eigenlijk doen.	Climate-KIC innovation project
Time to market	En sommige zaken zullen heel realistisch zijn, andere compleet onrealistisch, maar misschien met een **doorkijk naar 2025**. Nou ja, wij moeten **het vijf jaar lang volhouden**, maar als we dat eenmaal gedaan hebben dan zijn **we door de valley of death heen** en dan gaan we centen maken.	Climate-KIC innovation project
Time to market	**70% onderschat de doorlooptijd;** die denken vaak: binnen 6 maanden heb ik mijn eerste klanten, dat gaat ook meestal mis. … uiteindelijk kunnen ze wel heel veel van die producten verkopen, **alleen niet binnen twee jaar.** Dat duurt veel langer.	Business development EIT ICT Labs
Time to market	Kijk, het doel is **dat bij 100% van die resultaten op een of andere manier een commercieel resultaat uitkomt. Alleen, de vraag is wanneer**. Je hoopt dat dat meteen het jaar erna al zichtbaar is, maar dat kan ook nog jaren duren. Dat weet je dus niet.	Business development EIT ICT Labs
Time to market	Dus als er in één action line ze een onderzoek doen naar een nieuw draadloos netwerk, ja, **dat kan nog jaren duren voordat dat natuurlijk commercieel wat wordt.** Die projecten zitten er ook tussen.	Business development EIT ICT Labs
Time to market	Ik ben er nu mee bezig samen met de manager van deze collocatie center om te kijken of we dit niet veel meer programmatisch kunnen aanpakken want dit project heeft nu een aantal dingen opgeleverd en we hebben een heel netwerk gecreëerd van mensen die bezig zijn om dit thema en een **hele portfolio van allemaal ideeën met technologieën erachter die op dit moment nog niet geschikt zijn, maar zodra er een ander wind gaat waaien in de maatschappij zou je dit zo naar de markt kunnen brengen**. Dan heb je een ontwikkeltijd van 1 a 2 jaar. En dan heb je het wel op de markt, maar daar moet nu veel geld in en dat is er nu niet.	innovation project manager KIC InnoEnergy
Portfolio management, Time to market	Dat is een beetje een punt van zorg. Ik geloof dat je ook **duurzaam als KIC organisatie kan zijn als je aan programmamanagement doet over die verschillende projecten heen,** want die projecten zijn gewoon een kenmerk van die Europese financiering. Dat zijn **projecten die een kop en een staart hebben en dat houdt op een gegeven moment op, maar niet elk project laat zich makkelijk in zo een keurslijf van drie jaar vatten**, dus of je zit wat meer aan het begin dat je meer research werk hebt en ja dan hou je nog wat over of je zit op het eind en dan ben je eigenlijk al te ver om voor KIC interessant te zijn, want heel veel van die bedrijven die al een heel goed feasible product hebben, die zeggen: ik heb KIC niet nodig, die doen allemaal moeilijk met regels, ik ga wel naar een bank of venture kapitalist. Dat gaat ook, dus je moet flexibel kunnen zijn,	innovation project manager KIC InnoEnergy

	ook in de KIC organisatie en doordat je een portfolio gaat maken, en daar zijn wij dus mee bezig, **een portfolio waarin je zegt nou we hebben een roadmap en dat is de lange termijn visie en we hebben korte termijn project resultaten, dan kun je ook blijvend de zaken gaan blijven monitoren en gas geven wanneer het nodig is en soms gas terugnemen wanneer het nodig is en dat komt later dan weer.** Zoiets moet je hebben. Ik bedoel grote bedrijven doen dat ook. **Maar heel veel Europese of nationale subsidieprojecten, die hebben die mogelijkheid niet en dan krijg je: geld is op, klaar, doen we wat anders. Zonde!**	
Portfoliomanagement	Wij noemen dat **portfoliomanagement; wij delen de projecten niet meer op in 0 of 3 jaar, voor ons is het gewoon stage gating; het hele project wordt opgedeeld in een aantal fasen, dan heb je een gate en daar hangen criteria aan.** Als je die criteria niet haalt, krijg je een waarschuwing en moet je afspraken maken en die moeten binnen die tijd opgelost zijn anders stoppen we met het project. Dus veel meer een bedrijfsmatige aanpak van dit soort projecten, waarbij KIC het budget wel beheert, in principe alloceert, aan een project, maar er ook weer kan afhalen indien de afspraken niet nagekomen worden en dan ga je het alloceren naar een ander project en dan is wel bijzonder en dat vind ik zelf ook de toegevoegde waarde van een KIC organisatie. Dan ga je niet meteen vanuit Europa subsidiëren, maar er zit echt een organisatie tussen die dat stukje monitoring oppakt en dan kun je zeggen: **dit moeten we in de ijskast zetten en we gaan nu investeren in een ander project, wat wel heel veel tempo maakt.**	innovation project manager KIC InnoEnergy
Portfoliomanagement	We **vanuit KIC veel meer aandacht geven aan zelf die bedrijven opstarten**, omdat ze zelf ook in staat moeten zijn **om die kennis te borgen en we hebben daar nu eigenlijk niet de organisatie voor**. Het zou dus best kunnen dat wij daarom zeggen; ik weet nog niet hoe het met dit innovatie project gaat, maar ik zie nog wel gebeuren dat wij een apart bedrijf gaan opzetten, een aparte BV waar we zowel rijpe marktproducten inbrengen die niet kant en klaar zijn.	innovation project manager KIC InnoEnergy
Extension	**Typisch duren die één jaar,** je moet elk jaar weer een nieuw project definiëren, dus dat is heel mooi overzichtelijk. Maar het kan ook zijn dat je **er nog een extensie aan toevoegt**, dat het twee jaar wordt.	Business development EIT ICT Labs
Extension	**Verlengen daar staan we heel weigerachtig tegenover** omdat we dat meestal niet willen. Eerst hebben we dus die feasiblity fase, wat een **go/no/go moment** is, en dan hebben we ieder kwartaal effectief de evaluerende fase. En er **worden projecten afgezet**, maar er worden ook budgeten verhoogd of verlaagd.	Business development KIC InnoEnergy

APPENDIX INTELLECTUAL PROPERTY RIGHTS

Tag	Quote	Source
Background vs Forgeround knowledge	Ja das wel een lastige, want zo simpel is het nu ook weer niet want ook dat moeten we nog uitvinden hoe dat dan werkt, want **in feite is alles wat gefinancierd is door KIC foreground knowledge en daarvan zou een return on investment moeten komen vanuit KIC**. **Alleen omdat dat nog niet zo tastbaar is en omdat niemand daar al mee aan de slag gaat, is daar helemaal nog geen return on investment uit te krijgen, dus voor nu hebben we dat maar gelaten bij de partners en begeleiden we de partners naar nieuwe project proposals, zodat zij misschien volgend jaar wel weer met een project voorstel komen zodat het wel weer doorontwikkeld kan worden.** Maar dat is een hele lastige **want dan gaan die project partners dat inbrengen als background en op background krijgt KIC geen return on investment, alleen over foreground.** Ik vertel dit ook even voor jou, want ik ben aan het vertellen hoe ons model in elkaar zit en dit maakt het heel lastig om dit soort programma's te draaien, dus daar moeten we met onze KIC business modellen ook rekening mee houden dat we een goeie plek hebben bij onze return on investment.	innovation project manager KIC InnoEnergy
Foreground IP	Kijk, **want alle IP wordt gedeeld door het consortium. Het gaat natuurlijk vaak hier om de IP.** Alle partners brengen IP in, want ze hebben immers al onderzoek gedaan, dat is een voorwaarde. **Vervolgens wordt er mogelijk nieuwe IP gegenereerd en die mogen ze allemaal gebruiken. Ze hebben allemaal recht op de nieuwe IP, foreground IP heet dat. Alleen, er is er eentje die daar echt commerciële resultaten mee gaat boeken. Dus daar moeten ze samen afspraken maken hoe ze daarmee omgaan. En dat kan per keer verschillend zijn. Dus het hele hoofdstuk rond IP is wel een interessante, en een hele lastige in dit verhaal**. En dat is nog niet zo evident allemaal. Als je gaat onderzoeken van "Hoe zit dat nu?" dan is dat best wel een lastig gebied, zullen we maar zeggen.	Business Development EIT ICT Labs
KIC InnoEnergy, Foreground IP	We werken dus vaak met IP-gevoelige informatie, waarbij we dan background, sideground en foreground value definiëren. En die definiëren we vrij helder en strikt. En uiteindelijk, **in tegenstelling tot sommige andere KICs, is het de bedoeling dat KIC InnoEnergy een revenue deling doet van de winst die gerealiseerd wordt. Ofwel op een licentiebasis van IP, ofwel puur op revenues van producten of diensten.** Dus in die zin is het revenue sharing naar KIC, maar soms ook naar de andere partners. Dus in die zin is het heel belangrijk om dat heel helder te hebben, van "Welke partner doet het? Wie is de value creation, capturing en de value delivery partner in het verhaal?" Dus dat ook de revenues terugkomen naar iedereen. **Het verhaal van de background IP, de foreground wordt heel helder, maar ook op een stage wide approach aangevat, omdat je aan het begin vaak nog niet weet waar je gaat**	Business Development KIC InnoEnergy

	eindigen en wat net het einde uiteindelijk is. Dus in die zin hebben we er een heel mooi proces voor en dat werkt.	
KIC InnoEnergy, Foreground IP	Is echt een lastig punt omdat ze in principe niet direct concurreren met elkaar, maar we werken wel met producten die kansrijk zijn in de markt, zouden kunnen worden. Dus er is wel veel voorzichtigheid en **als je het echt hebt over open innovatie en we delen alles maar met elkaar, dat nee, er wordt toch wel enige zorgvuldigheid daarin betracht, er wordt veel met non-disclosure agreements gewerkt.** We maken in het grote project kleine groepjes, want er worden eigenlijk heel veel producten ontwikkeld in dat hele project, en we **maken kleine groepjes die meer informatie met elkaar uitwisselen** en die ook met elkaar weer aparte contracten maken over hoe ze omgaan met die kennis en met eventueel de exploitatie van die kennis. Dus dat wordt helemaal gefaseerd en in de tijd wordt dat ook steeds strakker. Op het moment dat je echt met research bezig bent, dan is het allemaal nog ideeën uitwisselen en werk je op basis van een algemeen NDA, maar zodra je richting producten gaat, dan wordt het steeds concreter want er wordt steeds meer waarde toegevoegd aan die kennis, die vermarkt kan worden en dan wordt ook het contractmanagement steeds belangrijker.	innovation project manager KIC InnoEnergy
Juridical aspects, Foreground IP	**Die IP blijft toch...** is een beetje gescheiden... Uiteindelijk de enige oplossing bleek, praktisch oplossing, misschien als we nog eens drie jaar verder hadden gepraat dat we nog een andere oplossing met **zevenhonderd advocaten erbij...** Maar voor ons, de meest praktisch oplossing op dat moment was om toch **die dingen een beetje gescheiden te houden en dat niet in één grote pot te gooien. Want dan wordt het heel lastig, ook omdat... Je neemt heel veel IP mee, hè**, dus dat is dan lastig.	innovation project manager Climate-KIC
Juridical aspects	Dus wat er dan aan problemen zat dat was meer aan juridisch/administratieve kant dan aan de inhoudelijke kant van de mensen die het werk deden. Bij IP. **KIC leert al gaande moeten ze alle regels nog bedenken, ze leren het allemaal nog. En wij hebben daar toch wel... Wij zaten midden in het leerproces van die KIC.**	innovation project manager Climate-KIC
Juridical aspects	Dus wat er dan aan **problemen** zat dat was meer aan **juridisch/administratieve** kant dan aan de inhoudelijke kant van de mensen die het werk deden. **Bij IP**.	innovation project manager Climate-KIC
Juridical aspects	De transparantie is matig en dat is een gevoelig punt, want bijvoorbeeld als je bij elkaar zit dan willen **techneuten makkelijk over hun dingen praten, dat is algemeen bekend, maar op het moment dat je dingen wilt vastleggen, documenten, documentmanagement, dan is het een gevoelig van: waar wordt het vastgelegd?, is het wel veilig?, kunnen geen anderen er aan komen?.** Dat is een heel heikel punt. Gebruik van email om informatie te delen, ook heel beperkt.	innovation project manager KIC InnoEnergy
Juridical aspects	Wat ook belangrijk is, is **het verdienmodel voor wat betreft de IP** want dat ga je parallel daaraan ontwikkelen. Logisch want je zit dus met een **consortium constructie en iedereen heeft zo**	innovation project manager KIC InnoEnergy

	zijn deel daarin geleverd, dus je moet ook zorgen dat je intern weet: wie krijgt welke return on investment? Dat heeft ook heel veel tijd gekost. Wij hadden van tevoren een standaard percentage en dat is voor elk KIC project zo, maar ja de situatie loopt toch altijd weer wat anders en mensen verschuiven en de een gaat over naar een andere organisatie. Nou ja die dynamiek wil je uiteindelijk wel weer erin. Dat gaat dan eerst in een term sheet met globale afspraken daarin en die moeten dan omgezet worden in een contract en dan komen de juridische mensen erbij. Voordat je dat doet heb je ook weer een iteratie naar je business model want op een gegeven moment komt er **een universiteit en die zegt; ja luister maar wij willen niet een risico nemen op een bepaald stuk IP, want als de marktpartij een inbreuk constateert op een ander patent kan die marktpartij je aanklagen.** Dus dan ga je kijken welke kosten en financieel risico daaraan verbonden zijn en dan moeten we weer terug naar ons business model, want dat hadden we niet ingerekend en zo blijf je dus itereren totdat uiteindelijk het contract getekend is.	
Big consortium partners	Bijvoorbeeld intellectual property right, hoe ga je dat regelen? En **voor een bedrijf als IBM, dat eigenlijk van patenten aan elkaar hangt, is dat heel belangrijk. Kijk, voor ons is dat een stuk minder belangrijk. We bedenken wat, we publiceren het en als het gebruikt wordt is het mooi want daarvoor worden we betaald. Maar voor een bedrijf is dat natuurlijk heel anders.** En wij doen daar nog wel eens lichtzinnig over maar het is ook: alles wat je meeneemt om een product te bouwen... **Stel je zou een Excel sheet neerzetten, denk je van "Nou, dat moet toch kunnen." Ja, maar voor ons kan dat wel maar voor een IBM is dat heel lastig want Excel is niet van IBM, dat is van Microsoft. Enzovoort**. Ze hebben enorme patentenoorlogen in Amerika, natuurlijk, over dat soort zaken. Dus wij denken daar wat licht over maar het is niet zo eenvoudig. En dat duurt nog heel lang. En als je dan verschillende culturen, verschillende landen, verschillende bedrijven, ja, dat kan toch nog wel wat... het heeft nog wel wat voeten in de aarde gehad.	innovation project manager Climate-KIC
Big consortium partners	"Maar wat je wel ziet met de grotere bedrijven en grotere partners, die zijn **vaak wat terughoudend en bang dat geheimen weglekken.** Soms is dat een beetje overtrokken in mijn ogen. De echte secrets moet je ook gewoon niet op tafel leggen. Maar die grotere concerns zijn dus meer protectionistisch, zoals dat zo mooi heet."	Business development EIT ICT Labs
KIC	Daar zijn standaard bepalingen voor die in overeenkomsten zijn vastgelegd. Het is in ieder geval zo dat **KIC ook mede-eigenaar is van het IP. We hoeven daar niet direct geld voor, maar het is wel van belang dat wij de successen kunnen nuttigen en op het moment dat ze de IP rechtstreeks doorverkopen, dat we daar wel iets voor terug moeten krijgen.**	Business Development EIT ICT Labs

APPENDIX SUPPORT FROM CLIMATE-KIC

Tag	Quote	Source
Business development, Scalability	Wat wij doen is **enerzijds het financieren van R&D projecten, we begeleiden, we coachen, we doen business development processen, we brengen mensen en partijen bij elkaar**. We proberen echt sturing te geven naar een maximaal resultaat, dus ook zorgen dat als we **een innovatie hebben in Nederland bijvoorbeeld die we willen uitrollen in Duitsland, dat we die ook daadwerkelijk gaan uitrollen daar en dat we daar mensen voor inzetten in Duitsland die dat op kunnen pakken etc.**	Business Development EIT ICT Labs
Startup coaching	Wij hebben binnen Europa 25 business developers met een redelijke goede achtergrond en profiel. Zijn bijna allemaal veertigers met een hoop IT- en management ervaring en vaak ook zelf een actieve rol of in de coachingrol van start-ups hebben gezeten. Wat wij doen is echt **klankboarding, coaching, acces to finance, geld ophalen, internationale uitrol**. Dat zijn de dingen waar wij druk mee bezig zijn; business development, de eerste klanten ophalen.	Business Development EIT ICT Labs
Network	**De communities** gaan we dit jaar voor het eerst doen, dat is gewoon een groep van zo'n 20 of 21... wat nou het laatste getal is, het is net gelanceerd. Maar start-ups in Europa, en die laten we dan ook bij elkaar komen. **We zorgen ook dat er onderling mogelijkheden zijn tot samenwerking. Dat is een nieuwe manier om te kijken naar hoe we daar weer kunnen versnellen.** Ze zitten **allemaal in hetzelfde schuitje in de zin dat ze allemaal dezelfde problemen hebben, en vandaar dat we dingen proberen te bundelen.** Dus het is een experiment, dat doen we in één action line en dan gaan we kijken wat daar uitkomt. Want we weten nog niet precies hoe dat gaat lopen. Vorig jaar hebben we een klein stapje gemaakt al met een community, maar nu doen we het wat officiëler.	Business Development EIT ICT Labs
Network	Die ondersteuning bieden wij vanuit KIC, misschien om daar nog even op in te gaan enerzijds vanuit KIC InnoEnery bieden wij **ondersteuning aan het matchmaking gebeuren op voorhand, zodat de juiste partners ook mekaar vinden.** Zo hebben we bijvoorbeeld deze week drie dagen een Europees **matchmaking event** in Amsterdam, waar 144 partners, vorige week 144 al, deelnemers ingeschreven zijn om daar naartoe te komen.	Business Development KIC InnoEnergy
Network, training, exposure	Enerzijds het **faciliteren in de matchmaking fase en ook in de proposal schrijffase**. We zien daar ook nog, **we hebben ook een market dive training, een soort marktanalyse training,** die we ook aanbieden aan partners. Zowel bedrijfspartners, het is ook niet alleen aan interne partners. Maar ook om te zien van "**Hoe moet je nu net een marktanalyse doen?" Dus dat is in de beginfase. De eindfase doen we die business development, een gedeelte. En in de tussenliggende fase is het bijsturen, evaluerend en funding**. Natuurlijk bieden we ook **vele fora en vele platformen aan aan de ondernemers**	Business Development KIC InnoEnergy

	om producten en diensten bekend te maken.	
Network	De grote meerwaarde zit ook in **het netwerk dat wij hebben en dat wij openstellen**. En met het netwerk bedoel ik dan voornamelijk ook: om een bepaalde **voeling met de markt te creëren moet je kunnen spreken met mensen uit de markt,** en dat enabelen wij en dat platform bieden wij. **Dus daar waar de start-up heel moeilijk is om bepaalde deuren te openen die wij wel openen.**	Business Development KIC InnoEnergy
Knowledge	**KIC zit er als partner trouwens ook in. Niet alleen om te financieren, maar ze leveren ook kennis.**	innovation project manager KIC InnoEnergy
Business development	Hoe kan nou Climate-KIC **via business developers het project nog op een iets hoger niveau tillen**? Zodanig dat je aan die business ook echt kan beginnen. Kijk, nu hebben wij het op papier staan. **Als ik jou die getallen laat zien en die stromen dan geloof je het. Maar als je de onderliggende realiteit kent dan zeg je "Oh ja, maar dat hebben jullie eigenlijk nog helemaal niet zo hard aangetoond. Kan dat wel?"** En dat is een beetje waar wij nu ook tegen aanlopen, dat de realiteit eraan komt maar dat er nog steeds bepaalde gebieden niet goed geëxploiteerd zijn. Dus dat betekent dat daar nog **niet voldoende kennis is om daadwerkelijk die business rond te krijgen. We weten dus nu wat ongeveer de waarde is van de individuele componenten, maar we weten nog niet precies hoe we die componenten nou echt heel goed van elkaar weten te scheiden.**	innovation project manager Climate-KIC
Business development	De **technologie projecten dat is echt nog een ondergeschoven kindje geweest. Mijn mening is dat er te weinig is uitgekomen, maar daar is nu ook vernieuwde focus op, dat de business development ook heel duidelijk bij die voorstellen vooraf betrokken is**. **Dus veel meer aan het begin, nu moeten we dus ook verplicht mee schrijven aan die projecten in plaats van op het eind aanhaken om te vercommercialiseren**. Op het moment dat het R&D project is aangekondigd, gaan ze aan de slag en dan roepen ze er pas na twee jaar een business developer bij, dat werkt niet. Nu zijn we echt vanaf het begin betrokken.	Business Development EIT ICT Labs
Business development	**Als ik één ding eruit haal wat we beter moeten doen dat is inderdaad die inmenging van business development in die researchprojecten vanaf het begin**. Dat is in gang gezet maar dat gaat denk ik nog meerdere stapjes krijgen. **Waardoor je dus met nog een betere business pet toch die projecten gaat inrichten**. We hebben uit het verleden, kan het voorkomen dat een action line wordt geleid door een onderzoeker, omdat die echt kennis heeft van dat domein. Maar ja, als je dan een **consortium hebt met allemaal researchers en iemand die dat leidt die ook researcher is, dan blijft het toch allemaal weer in die research hangen. Daarvoor hebben we nu besloten: we gaan daar veel meer business development opzetten.** En ik zou dat eigenlijk nog veel sterker willen doen, nog veel nadrukkelijker. En ik denk dat dat ook gewoon die kant	Business Development EIT ICT Labs

	opgaat.	
Business development, Network	**Daarnaast ook hetzelfde verhaal met die business developers, zoals zojuist gezegd, voor die innovatieprojecten om dat verder te versterken**. Dat we dat ook binnen business creation, het gaat om dezelfde personen, daar ook voor aan het inzetten zijn. **Ook om die Europeanisering in dat netwerk nog Europeser te trekken en niet te beperkt te blijven**.	Business Development KIC InnoEnergy
Business development	"**Nee, het blijft toch te veel in de research hangen."** dus het moet daar nog meer uitgetrokken worden. En ik denk dat dat een proces is wat verder door zal gaan. Dus het zal nog verder aangescherpt worden.	Business Development EIT ICT Labs
Business development, Network, Training	the KIC has been really helpful to us in terms of **supporting with the development of the business in an early stage;** helping us with looking to some business model ideas, providing us with seed funding, providing us with several training possibilities and also access to a **big network of partners, which we can share ideas with and collaborate with.**	Startup Climate-KIC
Business development	**Doordat die researchprojecten naar mijn mening nog iets meer op de researchkant zijn ingezet kom je wel met resultaten die dus research wise goed zijn, maar die commercieel dan toch niet de goede aansluiting hebben**. En dat komt, mogelijk, omdat daar degenen die dat project hebben ingericht te weinig business development input hebben gehad. Dus ik zie wel een soort fenomeen dat wij nu ontdekken, dat ik zei ik ook al eerder, dat dat **business development veel meer gaat kijken naar de researchprojecten.**	Business Development EIT ICT Labs
Business development	Het is redelijk makkelijk. Het is gewoon heel fijn geld wat je nodig kan hebben, en het helpt je business vooruit. Ook gewoon qua development, **niet alleen qua cash maar ook qua development en ontwikkeling van je businessplan helpen ze je enorm. Een Europees fonds waar we heel blij mee zijn.**	Startup Climate-KIC
Business development, scalability	**Daar zijn we nu een business developer aan het aanstellen die dat dan daar ook verder commercialiseert**. Dus in die zin hebben we veel meer die European coverage, en dan ook de link met de andere partners, want dat is vaak, als kleine MKB-ondernemer heb je daar niet de resources en de tijd voor om dat te doen. Dus het is een gedeelte van de taak van de **KIC business developers om die internationalisering van de sales over te nemen.**	Business Development KIC InnoEnergy
Location	Ik denk dat het goed is dat we meer op 1 locatie zitten soms. Mensen werken op te veel een locaties en dat werkt niet altijd even goed. Er moet toch meer interactie zijn tussen de co-locaties, er is al heel veel, maar dat kan nog beter. Maar **communicatie binnen een internationale organisatie op meerdere locaties blijft een lastig spelletje.**	Business Development EIT ICT Labs
Investors	I suppose the one thing would be if there was a **more formal process for investment readiness.** I guess a lot of startups like us come to the KIC program and they are going for raising finance to develop their business and maybe if there was a	Climate-KIC startup

	way that the KIC had an investment group you could speak to, like a set of people who they knew, a network group who were interested in investing in climate change related business, that would be useful.	
Community	**Everybody's journey is different at that phase and it would be quite interesting to see the way and the time that other people spend doing things;** to see did we forget that or are we spending too much time on this or not enough time on that. Not all businesses would want to share that, but Climate-KIC could find a way to include this.	Climate-KIC startup
Investors	**Toegang tot financieringsinstrumenten, is een heel netwerk aan investeerders, dat zouden we ook nog verder moeten laten groeien**. Dat is nou echt iets wat we ook nog beter kunnen doen,	Business Development EIT ICT Labs

APPENDIX BUSINESS MODEL

Tag	Quote	Source
Check	We looked at the business model canvas quite early on to think about the model and it helped us quite quickly. It was good because it is easy to have a lot of conversations about the customers, products etc. but the canvas gives you the opportunity to bring it all together for one business idea. So I think **it is really good to check if you have everything that is necessary for a business model and it gives you a clear way to talk about your business, because it lays out all the different parts.**	Startup Climate-KIC
Tool	We hebben die in ons voorstel maar ik weet niet of ze het begrepen hebben. Waarschijnlijk niet want ze misten bepaalde dingen. Ho, mag ik niet zeggen over Climate-KIC, dat ze het niet begrepen. Hebben we **al die canvasmodelletjes gemaakt en die geven aan waar de lijntjes liggen. Maar daar staan ook de financiën in. En dat is een model, maar of dat dan een realistisch werkbaar model is waar gericht op gestuurd wordt, nee dat denk ik nog niet**.	innovation project manager Climate-KIC
Opportunities	Ik moet zeggen dat ik er wel **veel van geleerd heb, om op een andere manier naar samenwerkingen te kijken. Want door het maken van die canvasmodelletjes**, en dat vloeit voort uit een presentatie die ik ooit bij Climate-KIC in Utrecht heb gevolgd, al dik een jaar geleden, en dat ging daar over. Dacht ik "Oh, misschien is het wel eens leuk om daarmee aan de slag te gaan." Dan doe je dat en dan blijkt dus dat je op die manier **veel meer inzicht krijgt in enerzijds de kennisstromen, maar ook "Waar liggen de vragen, bij welke partijen?" en "Welke vraag is onzinnig omdat je die zelf al bedacht hebt?"** want dat gebeurt ook vaak. En dat dat ook gecombineerd is met inzicht in de daadwerkelijke kosten van al dit soort fratsen, want laat ik het nou zo maar even noemen. Je schrikt soms van hoeveel er bij komt kijken om iets op te starten.	innovation project manager Climate-KIC
Insight	**We zijn daar inderdaad aan de gang gegaan met zo'n canvas. Op die manier zijn we vrij snel tot de conclusie gekomen van "Nou ja, het is leuk om die regenmeters te verkopen maar daar ga je niet rijk van worden."**	Startup Climate-KIC
Opportunities	Dus **je vindt gewoon nieuwe markten die je kan bedienen. En daardoor zal het een beetje veranderen.** En verder dan dat zal ons model niet heel veel meer veranderen denk ik.	Startup Climate-KIC
Opportunities	We looked at **the business model canvas quite early on to think about the model and it helped us quite quickly.. It was good because it is easy to have a lot of conversations about the customers, products etc. but the canvas gives you the opportunity to bring it all together for one business idea. So I think it is really good to check if you have everything that is necessary for a business mode**l and it gives you a clear way to talk about your business, because it lays out all the different parts.	Startup Climate-KIC

Tested business model	**Het is ook heel belangrijk dat er een getoetst business model is. Heel vaak zie je dat men wel iets heeft gemaakt of bedacht, maar dat betekent niet dat daar daadwerkelijk behoefte aan is.**	Business development EIT ICT Labs
Beginning	Het leuke is de eerste ideeën, die waren er al vrij vroeg en dat moet ook wel want bij zo'n projecten moet je **bij het begin een idee hebben over het business model. Alleen gaandeweg wordt duidelijk hoe de markt er op zal reageren.**	innovation project manager KIC InnoEnergy
Business model innovation	**Een business model waarmee je de markt op kan, is niet het business model waarmee je over 5 of 10 jaar meer verder moet, dat bestaat niet.** Succesvol wordt meteen gekopieerd, duurzaam zijn is blijven aanpassen.	innovation project manager KIC InnoEnergy

APPENDIX CUSTOMER INVOLVEMENT

Tag	Quote	Source
Market	**Onze klanten zitten in het project en dat is vrij bijzonder, dus onze klanten houden ons scherp.** Zodra wij producten ontwikkelen die al op de markt zijn, dan wordt meteen gezegd: daar doen wij niet aan mee. Dus onze drie klanten, grote jongens in dit veld, hebben gespecificeerd wat ze nodig hebben. Dus we hebben een analyse van de problemen gedaan. Elk land heeft dan weer zijn specifieke problemen omdat de netwerken niet hetzelfde zijn. Op basis daarvan zijn de requirements opgesteld; eerst welke producten welke problemen aanpakken en op basis daarvan is gezegd wat we moeten ontwikkelen en dan is er ook nog een keer gekeken naar wat die producten kosten. … Zo worden requirements gesteld aan de ontwikkeling en dat gebeurd dan dus automatisch, maar nu zijn we wel in een fase van het business model waar dat veel meer tijd en aandacht gaat krijgen. **Eerst hebben we ons met name gebaseerd op wat de klanten ons vertelden,** maar nu zijn we ook zelfstandig in de markt aan het kijken; hoe brengt de concurrent de producten en is er nog een aanvullende dienstverlening die ze brengen? Nu moeten we echt wel weer een concurrentie analyse doen, want de markt verandert ook en we kunnen er niet vanuit gaan, hebben we gemerkt, dat onze klanten goed weten wat de nieuwste snufjes zijn op het gebied. Die lopen niet altijd even goed bij.	innovation project manager KIC InnoEnergy
Involvement	**Eigenlijk zijn de klanten indirect betrokken.** Het KIC project steunt natuurlijk ook andere projecten, en die klanten zitten vooral dan in andere projecten. KIC heeft toch vooral gezorgd om een aantal van die dingen uit te proberen en bij elkaar te brengen. **En die klanten zitten dan wat meer in die andere projecten. Dat zijn dan gemeentes of waterschappen, overheden, grotere bedrijven.**	innovation project manager Climate-KIC
Involvement	**Het is altijd geweest dat we gewoon heel veel naar mensen toegaan. Heel veel bezoeken,** we gaan naar conferenties. We hebben een raad van advies die ons bij bedrijven naar voren pusht, die ons kenbaar maakt. Maar steeds meer komen ze naar ons toe en komen liever naar hun toe.	Startup Climate-KIC
Involvement	**Je moet continu met je klanten praten,**	Startup Climate-KIC
Market	**They are a little bit in the sense that some of them are already in a prototyping phase so they are really keen and they want to be able to buy more from us and they like what we are doing.** One way in which they are involved is that we can grow specific crops to order, **so we can talk to our customers about what variety of crops they would like us to grow. Quite a lot of involvement from that point of view. Also, because our customers are the restaurants we sell to and they know the market very well.** It is their market, so it makes sense for us to work with them to make sure we can	Startup Climate-KIC

	provide what they want to buy	
Involvement	De producten worden ontwikkeld en we vragen steeds; hoe wil je dit hebben?, hoe wil je dat hebben? **Dus we krijgen steeds wel feedback van klanten e**n we hebben bijvoorbeeld vorig jaar nog producten laten vallen omdat er een concurrerend product op de markt was gekomen of zou komen. Het was weliswaar te duur, maar we wisten al dat als we met deze technologie doorgaan, zij ook gaan optimaliseren. Wij zullen niet veel goedkoper kunnen worden, dus we laten dit nu vallen. In mijn project had ik het liever nog intenser gehad, dus je mag zeker niet concluderen dat het in het begin veel zou moeten zijn en dan minder. Het moet eigenlijk continu aandacht hebben.	innovation project manager KIC InnoEnergy

APPENDIX TEAM

Tag	Quote	Source
Creation	Stedelijk waterbeheer is wel een belangrijk thema hier aan de TU. **En leefde ook bij een aantal andere KIC partners. Dus zo is dat eigenlijk begonnen.** Dat heeft vrij lang geduurd voordat het ook liep, moet ik ook zeggen. Maar eigenlijk omdat het een betrekkelijk logisch idee was... Ja, **we werkten al aan dit soort dingen, maar door de mogelijkheden die dan KIC geeft met betrekking tot partnerships en zo dachten we van "He, dat is wel een aardige deal om te proberen."**	innovation project manager Climate-KIC
Partners	Een van de **voorwaardes,** zo ben je gestart, Climate-KIC-voorwaarde, **was minimaal twee wetenschappelijke partners, zover ik me kan herinneren, maar absoluut niet van dezelfde universiteit, hè?** Dus de voorwaarden hebben ons al min of meer gedwongen, tussen aanhalingstekens, om extern samenwerking te zoeken met bestaande KIC-partners. Nou, zo ga je aan de slag.	innovation project manager Climate-KIC
Creation, Partners	**Ja mensen die elkaar gevonden hadden en aan de bedrijven waar ze bij het allemaal intern goed kunnen verkopen**, dat is belangrijk dat ze zeiden nog we kunnen wel aan zo'n proposal meedoen, dus hebben we het project binnengehaald en toen begon de ellende. Want toen kreeg je **al die consortium regels; je moet minimaal die landen meekrijgen, minimaal die disciplines en die bedrijven er bij betrekken en je moet dit doen en dat doen.** Toen is het project opgeblazen en zijn het uiteindelijk 13 partners geworden, waarbij die chemie er helemaal niet meer was.	innovation project manager KIC InnoEnergy
Partners	Dus dat **alle partners binnen de value chain aanwezig zijn, en, heel belangrijk, dat de commercialiserende partij ook aanwezig is**.	innovation project manager KIC InnoEnergy
People, Partners	**Partners zijn ook allemaal mensen en soms hangen dit soort projecten van mensen aan elkaar.** Je hebt innovatieve mensen nodig en met name reorganisatie in grote bedrijven die doen innovatie niet veel goed. Dus waar we eerst iemand hadden die zijn nek kon en wilde uitsteken en slim was en een goeie plek had in een organisatie, ging die naar een andere plek en **uiteindelijk is die helemaal verdwenen. Er is een fusie geweest van dat bedrijf met andere bedrijven, waarbij de hele interne organisatie op de schop ging. Dat soort dingen gebeuren. Het zou niet moeten mogen eigenlijk.**	innovation project manager KIC InnoEnergy
Nature of organization, Interests	Als je het gaat hebben over projectjes van miljoenen en meer op jaarbasis dan moet je daar echt bovenop zitten want anders gaat iedereen... **Ze hebben allemaal hun eigen belang, hè, dat is een beetje het probleem. Die bedrijven die willen dus centen maken,**	innovation project manager Climate-KIC
Nature of organization	**Als je bijvoorbeeld naar een universiteit kijkt, waar geweldige dingen worden uitgevonden. Dan ligt er iets moois maar dat idee is eigenlijk waardeloos als er niet een ondernemer opstaat die zegt "Ik ga hier de scoop van**	Business development EIT ICT Labs

	maken." Als dat niet gebeurt dan heb je eigenlijk nog niks, dan ligt het gewoon op de plank.	
Nature of organization	Het basisprobleem een beetje in Europa is wel dat al de **wetenschappers afgerekend worden op met name het aantal publicaties**, en uiteindelijk kun je daar geen... Dat is eigenlijk te weinig waarde, zullen we maar zeggen. Dat is een beetje een van de redenen waarom we in Europa achterlopen, omdat we eigenlijk te veel met die publicaties bezig zijn. Research om research en die valorisatie blijft wat achter.	Business Development EIT ICT Labs
Nature of organization	**Dus enerzijds de technische en de kennisinstellingen die iets hebben waarvan ze denken dat het heel waardevol is en daar een partij voor zoeken om dat verder uit te werken en te commercialiseren, maar in de praktijk blijkt dat dat een moeilijker huwelijk is, omdat vanuit de kennisinstellingen, en dat is mijn persoonlijke mening, er vaak te vroeg gestopt wordt met de ontwikkeling. En dat het eigenlijk niet rijp is om te commercialiseren** en dat er veel te veel stappen gezet moeten worden om te komen tot een commercialisatie. Het is niet afgestemd, ook vaak op de heel concrete node, dus dat is een piste die moeilijker werkt.	Business Development KIC InnoEnergy
Nature of organization	**Een belangrijke bedreiging, of misschien ook wel een zwakte, de verschillende belangen van al die organisaties. Doordat je universiteiten hebt die heel erg gefocust zijn op studenten financieren en gewoon budgeten moeten hebben om een student een promotie te laten doen, onderzoek te laten doen of een master te laten volgen en dus zekerheid willen van een traject en in dat verband ook willen kunnen publiceren. Daartegen het belang van een bedrijf is niet om zaken publiek te maken, maar zo lang mogelijk geheim te houden en ook om producten naar de markt te brengen. Nou dat is een constant gevecht; dat haal je er ook niet uit, want dat is gewoon de aard van het beestje.** Ja dat is een constante bedreiging op dit soort projecten waar ik hopelijk nog een keer een hele goede modus operandus voor kan vinden.	innovation project manager KIC InnoEnergy
Nature of organization	**Een universiteit die wil gewoon geld hebben voor studenten en een bedrijf wil geld hebben voor producten** dus dan heb je niet meer te maken met je eigen projectteamleden, dan heb je te maken met administraties. Dan heb je te maken met de back office van zo'n universiteit, dan heb je te maken met professoren die zeggen: luister er moet wel geld komen voor het volgende jaar en dan zeg ik als projectleider: ja maar wat lever je dan aan productontwikkeling en dat weten ze dan nog niet precies en dat kan natuurlijk niet. Nou dat vind ik wel een belangrijke bedreiging voor het project maar ook voor het hele concept van KIC.	innovation project manager KIC InnoEnergy

Nature of organization	Maar op een gegeven moment waren er... duurde het wat **lang voordat het contract echt rond was. Voor de kennispartners, dus Imperial, Wageningen, Deltares en Delft, was dat niet zo'n probleem**. Wij konden gewoon beginnen en we werden ook aangemoedigd om te beginnen. Dus wij zijn begonnen. **Maar voor een bedrijf is dat heel lastig, als je niet een getekend contract hebt dan zegt die baas van "Nee, je mag niet aan de gang."** Wij werden aangemoedigd om te beginnen en die anderen zijn dus wat later begonnen, dus het was ook een beetje uit tandem gegaan.	innovation project manager Climate-KIC
Team	Als dat groter wordt dan ontkom je er niet aan. Dan gaat het om substantieel veel meer tijd en geld en belang. **Ja, dan moeten er hele heldere afspraken zijn, regelmatige meetings.** Want dan gaat dat bedrijfsleven zich er ook mee bemoeien en die hebben ook allemaal hum eigen trukendozen**. En dat wil je samenbrengen in een geheel** wat werkt naar één product, of meerdere producten. **En dat kan alleen maar als je inderdaad als team gaat opereren.**	innovation project manager Climate-KIC
Team	Nou, dan zie je toch wel ook nog **dat Europa nog niet helemaal één is en dat er toch ook nog wel cultuurverschillen zijn, een hoop andere manieren.** Soms apart gedrag.	innovation project manager Climate-KIC
Team	**Het team, waar iedereen altijd over spreekt, ik denk dat dat zeker een van de belangrijkste punten is.**	Business development KIC InnoEnergy
Team	**Waar we soms moeite mee hebben is dat als we een technologie hebben, een team te vinden of een club te vinden die er echt mee aan de slag gaat.**	Business development EIT ICT Labs
Team, People	**Absoluut! Als er 1 les een learn is: met welke mensen doe je een project?** Want ik heb **met mensen gewerkt in projecten waarbij de organisatie gewoon tegen hing, maar de persoonlijke kracht zo groot** was dat het project gewoon heel goed ging en het omgekeerde heb ik ook meegemaakt, dat ik dacht; wat een fantastisch bedrijf alleen de interne vertegenwoordiging was zo zwak dat we er niks mee konden.	innovation project manager KIC InnoEnergy
Team	En de bedrijven die komen ook bij elkaar en die ontmoeten die mensen ook, **dus iedereen kent elkaar wel een beetje maar het is niet zo dat daar een heel groot, sterk team staat.**	innovation project manager KIC InnoEnergy
Team	**Je moet gewoon een heel goed team hebben. Het team is alles. Als je geen goed team hebt dan gaat het niet goed komen.** Dus je team is gewoon altijd belangrijk. **Dat zegt wel elke investeerder, elke bank zal dat zeggen dat het team nummer één is.**	Startup Climate-KIC
Team	**You need the right team with the right mix of people and skills.**	Startup Climate-KIC
Creation, Team	**Het kernteam bestond al voor dat we KIC hadden en dat was het idee, dat waren mensen die konden elkaar vinden op een product** en dat is het product dat nu ook het verste is en dat was bijna ondanks de organisatie waar ze inzaten.	innovation project manager KIC InnoEnergy
Team	Organisatie belangrijk is en **dat je een team hebt van mensen**	innovation

	die complementair zijn aan elkaar, die elkaar veel gunnen en ik denk dat dat belangrijker is dan het duurzame model, want je kunt niet van tevoren een model bedenken. In het begin van een project bedenk je iets en op den duur zit er zo veel in **dat je zoveel flexibiliteit moet hebben eigenlijk en dat lukt alleen als mensen flexibel zijn en als je mekaar kan blijven aanvulleen en kan blijven ontwikkelen.**	project manager KIC InnoEnergy
project lead	De keerzijde is dat **je weer heel veel partijen hebt en de besluitvorming wordt daardoor heel erg lastig**. Iedereen gaat overal over meebeslissen en heeft overal een mening over. Het zijn ook mensen met een sterke mening, dus daarvoor moet je oplossingen zien te vinden. Een **goeie governance structuur**, die heb ik denk ik wel gevonden nu binnen het project, waarbij je wel een **aantal leidende partijen hebt en daarmee neem je de besluiten en de rest heb je als netwerk** er bij voor de idee generatie, evaluatie, assesments.	innovation project manager KIC InnoEnergy
project lead	Contacten met de bedrijven die lopen eigenlijk bijna allemaal via mij. **Waarbij ik zo veel mogelijk informatie van ons uit naar de bedrijven toebreng en zij naar ons. En ik sluis het dan weer door naar de belanghebbenden binnen het consortium,** en dan meer op het wetenschappelijk gebied. Zo loop dat. Voor mij is het vrij natuurlijk en vrij eenvoudig, maar h**oe groter dat wordt, hoe lastiger het zal worden als project lead om daar nog een beetje structuur in aan te brengen.**	innovation project manager Climate-KIC
project lead	Naast Climate-KIC geld heel veel intern en extern geld tegen aan gaat. Ja, als het **echt hele grote projecten worden dan moet er ook gewoon heel veel tijd en geld besteed worden aan het management.**	innovation project manager Climate-KIC
project lead	Als je het gaat hebben over projectjes van miljoenen en meer op jaarbasis **dan moet je daar echt bovenop zitten want anders gaat iedereen...**	innovation project manager Climate-KIC
project lead	**Er is een gemeenschappelijk doel. Er zijn natuurlijk altijd wat interne strubbelingen. Dat kan gaan over wie de lead heeft op een bepaald gebied.**	innovation project manager Climate-KIC
project lead	Hoe zo'n team van verschillende bedrijven zeg maar zijn project inricht en vervolgens ook tot resultaten gaat leiden. **Gewoon omdat er iemand zit die die pet opheeft**. Want als die persoon er niet bijzit dan zit je toch met alle researchafdelingen en die blijven dan toch weer in researchfase zitten. Je moet daar dus ook iemand met die pet op hebben erin hebben zitten.	Business development EIT ICT Labs
project lead	Dat is niet makkelijk nee. Dus soms gaat het hard, soms gaat het zacht, heel verschillend. Je kunt daar niet altijd een antwoord op geven**. Soms moet je het gewoon hard naar een partner spelen en zeggen: je presteert niet, we hebben dit afgesproken en als je dit niet meer doet, dan doen we het niet meer.** Nou dit is met een partner gebeurd en een andere partner viel af omdat we, met name de klant, had besloten dat de producten niet meer nodig waren. Zo hou je uiteindelijk de kern over waar echt waarde zit van mensen die het willen, kunnen en waar waarde in het product zit.	innovation project manager KIC InnoEnergy

APPENDIX MARKET

Tag	Quote	Source
Customer	Daar zou dus een mooie start-up uit kunnen komen, maar dan **moet er dus wel een afnemer zijn**.	innovation project manager Climate-KIC
New market	De kansen zijn wel dat de markt gewoon... Dit kan een threat zijn of een opportunity zijn. **De markt is heel nieuw dus je kan heel vroeg instappen en daardoor je infiltratie ratio in de markt verhogen. Maar het kan ook een valkuil zijn, dat je te vroeg bent en daardoor voordat je het überhaupt kan verkopen al niet meer bestaat.**	Startup Climate-KIC
Market size	En het grootste gevaar is dat ze de **markt onderschatten en vooral de markt acceptatie. De markt is vaak wel groot genoeg, de potentiele markt.** Iedereen rekent als ik aan elke Chinees een flesje cola verkoop, dan heb ik heel veel geld verdient. Maar het probleem is dat niet al die Chinezen cola kopen en al zeker niet bij jou, want daar gaat het dan vaak om. Dat wordt volledig onderschat. Ik zeg altijd dat 50 procent van de start-ups de kosten onderschat om het product marktrijp te maken, 70% onderschat de doorlooptijd; die denken vaak: binnen 6 maanden heb ik mijn eerste klanten, dat gaat ook meestal mis. **En echt 99% onderschat de marktpotentie en dat is eigenlijk de grootste blunder die ze kunnen maken. Je rekent je zelf heel snel rijk.**	Business development EIT ICT Labs
Customers, scale	Ten eerste door veel conservatiever te zijn, je moet dus echt met een paar experts gaan praten wat wel of niet mogelijk is en ook met andere ondernemers gaan praten. Ze moeten dus echt gewaarschuwd zijn; uiteindelijk kunnen ze wel heel veel van die producten verkopen, alleen niet binnen twee jaar. Dat duurt veel langer en vaak het geval is dat men het te regionaal opzoekt, **men probeert in 1 land wat te proberen en ik ben daar inmiddels achter: stop daarmee, ga meteen zo veel mogelijk landen proberen uit te rollen, niet zelf maar met distributeurs met zo laag mogelijke kosten. Je kunt niet zo maar allemaal mensen aannemen en zelf rondrijden, daar loop je op leeg. En dat zeg ik ook heel vaak; je moet de eerste 100.000 klanten kopen, met andere woorden dat kost heel veel geld.**	Business development EIT ICT Labs
Market focus, Network	ze daar aandacht voor zouden moeten hebben. **Enerzijds ook meer weten wat er gebeurt in de markt. Dus op zich hebben ze heel veel netwerken, maar ze gebruiken hun netwerken niet.** Dus puur gewoon een soort ronde tafelgesprek rond bepaalde expertises, om daar in te zien van "Wat leeft er nu? Wat is er nu nodig?" Ik denk dat dat al heel belangrijk is om hun onderzoekstrajecten **duidelijker af te lijnen en duidelijker te richten naar de markt.** En anderzijds moeten ze niet te vroeg stoppen, want als bepaalde stappen niet gezet zijn dan werkt het niet. En lab scale, meestal vind ik dat ze veel te vroeg stoppen.	Business development KIC InnoEnergy
Need	**In welke mate hij inspeelt op een nood die er is.** Dus daar	Business

	spenderen we heel veel tijd aan, dus om dan de waardeketen te analyseren. **Duidelijk te zien wie welke nood heeft, en wie daarvoor geïnteresseerd kan zijn; dus om die nood te ledigen. En op welke manier; soms wordt er naar een eindklant gekeken terwijl dat niet de partij is die uiteindelijk die kosten gaat maken. Er moet een andere partij zijn die die kosten wel maakt, om zo ver te komen.**	development KIC InnoEnergy
Need	Dit is niet de approach die wij hanteren", **wij stellen voor om eerst de markt te analyseren, te kijken wat de noden in de markt zijn, en dan te kijken in welke zin of welke requirements er zijn waar het product aan moet voldoen en dat dan aan te passen.** Dus eerst die Lean start-up principes met naast uw technology development een goed customer development, en uw technology enhancement wordt een volgende stap. Dus ik denk dat we daar, in die algemene procedure, heel sterk in focussen.	Business development KIC InnoEnergy
First customers	**Je moet echt klanten kopen en dat kost heel veel geld en heel veel geduld en dat wordt meestal, of bijna altijd compleet onderschat.** Het is heel frustrerend, maar wordt echt onderschat.	Business development EIT ICT Labs
Need	**Met de focus om zoveel mogelijk af te stemmen met de grote boze buitenwereld, met de reële wereld. In die zin denk ik dat we heel sterk zien wat er leeft en dan ook zo snel mogelijk daar op proberen aan te passen en te anticiperen, om dan met andere oplossingen te komen.**	Business development KIC InnoEnergy

APPENDIX ENTREPRENEUR

Tag	Quote	Source
Requirements, Student	**Omdat je dan zeg maar een start-up hebt in een compleet nieuw vakgebied, maar wel in staat moet zij om continu veranderingen in die boze buitenwereld waar je dan terechtkomt, om die én te kunnen interpreteren én te tackelen. Dus een pur sang ondernemer die kan dat niet**. **Die is gericht op winst maken**, en op het moment dat hij geen winst maakt dan **zal hij niet zo snel meer genegen zijn om met dat bedrijf verder te gaan**. Die zeggen gewoon van "Het is jammer, ik heb deze stap geprobeerd, ik heb erin geïnvesteerd en het is niks geworden." **Dit soort bedrijven, waar het gaat om innovaties, dan heb je echt mensen nodig die natuurlijk wel ondernemer zijn, maar die ook juist naar die innovatie zoeken om iets van dat bedrijf te maken. Dat betekent dus dat je zowel kennis van ondernemen nodig hebt als van de onderliggende, eventuele wetenschap**. Dat hoeft niet, hè, maar in ons geval is dat wel zo. Zo zie ik dat voor me, dat je echt ene spin-out vanuit zo'n consortium krijgt, waarbij... **in mijn optiek zou moeten draaien om studenten die uiteindelijk met zo'n bedrijf moeten beginnen**. Mij krijg je niet meer zo ver. Ik zou dat wel willen, hoor, maar dan denk ik van: ja, ik heb nog tien jaar te gaan, bij wijze van spreken, dat betekent niet dat ik achterover leun, maar ik wil allerlei leuke dingen nog doen. Inclusief vaak op vakantie gaan met Jan en alleman, familie en vrienden, en dat kan niet als je een bedrijf begint. **Dan is het gewoon keihard beulen en... dan mag je af en toe wel eens weg, maar wil je er echt iets van maken dan is het gewoon 50 uur + werken in de week en dat vijftig weken lang. Kan. Maar dat zie ik liever een jonge man doen, en dan zou ik er best in willen investeren en dan ga ik achterover hangen. Maar je moet dus wel gedreven zijn**. En je moet het gevoel hebben van "Ik wil geld maken." Met een nobele gedachte van "Ik ga de wereld redden", ik geloof daar niet in. Dat wordt wel gesteld af en toe, forget it. Dat gaat hem dan ook niet worden. Dus daar zit een beetje.	innovation project manager Climate-KIC
Requirements	Iedereen vertelt je, **als je als techneut aan de slag gaat, dan denk je dat de techniek het probleem is, maar dat is het probleem niet, het is de markt vinden en de klanten vinden en de financiën vinden en dat soort dingen.** Het grappige... Dus wij dachten: dat is de klassieke start-up fout, die gaan wij niet maken. **Wij zetten een entrepreneur, iemand met een bedrijfskundige achtergrond zetten we erop en die gaat het bedrijf voornamelijk leiden.** En we gaan vooral in eerste instantie naar die markt kijken. **Nu blijkt dat we vrij veel naar de vraag kijken maar dat eigenlijk de technische ontwikkeling wat achtergebleven is. We hebben dat onderschat**, de technische problemen die we zouden... Van proof of concept tot een markt geteste... Marktrijp,	innovation project manager Climate-KIC

	duurgetest apparaat - sensor in dit geval, ik denk dat we dat traject onderschat hebben. En/of pech gehad hebben. Maar ik hoor wel van meer mensen dat het best wel een moeilijk traject is. **Traditioneel hoor je van een start-up dat je je te veel bezighoudt met de techniek en dan blijkt er geen markt te zijn, en bij ons hebben we ons dus 100% gericht op de markt** en kijken we elkaar na anderhalf jaar aan en zeggen "Oh, maar nu was het toch wel heel fijn geweest als we gewoon een doos met die sensoren weg konden zetten want er zijn in ieder geval klanten. Hadden we nu ten minste..." Dus dat is een beetje... Wel een apart ontwikkeling. **De ideale entrepreneur... Je moet ondernemend zijn, je moet toch ook positief zijn, maar realistisch. Dus het is eigenlijk toch wel een schaap met vijf poten, denk ik. Je moet én die techniek goed in je vingers hebben, én... en ook gewoon bedrijfskundig goed zijn. Je zou natuurlijk kunnen zeggen: dan zet je ze allebei erop, maar zoveel luxe heb je dan ook weer niet, dat je meteen drie, vier mensen... Je moet ook het geld ergens vandaan halen. Dus dat is nog wel een... Niet een onoplosbaar probleem maar best een lastige: hoe vind je die balans tussen die techniek dan en het bedrijfsmatige? De ideale persoon die bestaat niet. Je moet echt het allemaal in je hebben.**	
Requirements	**Het administratieve, belastingtechnische, juridische stuk, toch wel heel taai is en lastig**. Ik hoorde natuurlijk vroeger altijd wel die ondernemers klagen over die belastingen en dit en dat, denk ik "Ja, ja, ja, niet zeuren, betalen ‚jongens." Maar nu heb ik veel meer begrip voor de wanhoop waartoe regels je kunnen brengen en... Het geld is... Je hebt wel wat verkocht maar het geld staat nog niet op de bank maar je moet wel de BTW al afdragen, dat soort dingen. Ik begrijp nu een stuk beter waar men al die jaren over klaagde want dat is inderdaad wel een beetje taai. En dan schijnt het waarschijnlijk in Nederland nog een heel goed ondernemersklimaat te zijn vergeleken met... We betalen veel belasting maar je kan gewoon een bank rekening openen en dat soort dingen, dat gaat allemaal vrij rap hier. En dat gaat in andere landen, zoals Frankrijk, een stuk trager.	innovation project manager Climate-KIC
Requirements	**Doorzettingsvermogen, je moet gewoon een hele lange adem hebben. Gewoon heel lang door kunnen gaan en je moet het gewoon vol kunnen houden.**	Startup Climate-KIC
Requirements	**I think you have to be passionate about what you are doing, because it can be really lonely, frustrating and tiring and if you do not have the passion to carry it through it can be difficult.**	Startup Climate-KIC
Requirements	Mijn mening is dat moet **iemand zijn die techniek begrijpt, das 1. Twee; ze moeten een heel sterke marketing achtergrond hebben. Drie; hij moet zelf leiding hebben gegeven hebben aan start-ups, maar ook in multinationals gewerkt hebben om de grote boze wereld te kennen en daar zaken te kunnen doen. Dat is in mijn ogen de beste**	Business development EIT ICT Labs

	combinatie. Mensen met een brede kijk op de wereld en hard werken en niet om 5 uur denken, het is 5 uur. Het is geen 9 to 5, maar to 9. Er zijn er waarschijnlijk ook niet veel van, maar wel veel die pretenderen dat ze het kunnen, maar de praktijk leert toch dat ze dat vaak niet aankunnen.	
Requirements	**Goede entrepreneurs, er zijn ontzettend veel boeken over geschreven, je kunt er ontzettend veel over vinden. Dus ik kan zomaar ook mijn mening geven met een paar highlights**. Wat ik belangrijk vind als ik met een ondernemer aan tafel zit is: **heeft hij zijn huiswerk gedaan? In de zin van: weet hij wat er allemaal bij komt kijken wat het betekent? En dat hoeft niet te zeggen dat hij overal goed in is, maar hij of zij moet wel goed zicht hebben van wat nou eigenlijk alle onderdelen van het businessplan zijn, om maar iets te noemen**. Van wat je allemaal moet gaan doen. En dat wil niet zeggen dat je overal dat zelf moeten kunnen doen of sterk in moet zijn, maar een ondernemer, een eigenaar van een start-up, moet toch wel behoorlijk veel weten van alle onderdelen wil hij dus zeg maar succesvol gaan worden. Hij zal in de meeste gevallen financiering nodig hebben en dan moet hij **zijn businessplan verdedigen, pitchen, noem het maar op. Moet geld zien te krijgen.** En dan moet hij van alle markten thuis zijn. Dus het is een vrij holistische kijk, moet je hebben, ervaring**. Of ja, "ervaring", in ieder geval: je moet bereid zijn om dat allemaal te willen leren en daar gevoel voor hebben**. Ik denk dat dat het allerbelangrijkste is. Je zal natuurlijk ook zien dat er nog andere dingen gaan meetellen, in de zin van: hoe **kun je andere mensen meetrekken in je bedrijf? Stimuleren, in hele lastige tijden**, althans, als je geen geld hebt, hoe krijg je anderen mee? Daar moet je ook creatief in zijn. **Dus er komt ook creativiteit bij kijken. En een enorm doorzettingsvermogen. De mensen moeten het echt willen**. Dat is tevens het probleem, als je bijvoorbeeld naar een universiteit kijkt, waar geweldige dingen worden uitgevonden. Dan ligt er iets moois maar dat idee is eigenlijk waardeloos als er niet een ondernemer opstaat die zegt "Ik ga hier de scoop van maken." Als dat niet gebeurt dan heb je eigenlijk nog niks, dan ligt het gewoon op de plank.	Business development EIT ICT Labs
Requirements	Kijk, als een researcher zegt van "**Ik wil hier mee beginnen" maar hij weet eigenlijk nog helemaal niet hoe, maar wel de ambitie heeft, dat kan een hele goede basis zijn. Want zo iemand die is meestal wel slim dus die kan ook heel veel leren, en met de juiste begeleiding kan je een heel eind komen**.	Business development EIT ICT Labs
Requirements	De ideale persoon **is iemand die een voeling heeft met de markt. En dan benader ik... Voeling is niet dat hij noodzakelijk uit die markt moet komen, maar in ieder geval een heel sterke voeling om noden te identificeren**. Daarnaast denk ik als ondernemer dat het heel belangrijk is om te kunnen omgaan met hoogtes en laagtes in het verhaal. Je ziet soms enorm enthousiast en de volgende dag heel	Business development KIC InnoEnergy

	down. Dat varieert op basis van de kleine dingen en dat is de realiteit, dus het is een heel gevoelige omgeving waarbij je daar **mentaal sterk genoe**g voor moet zijn om daar mee om te kunnen gaan. Dat je ook de **mix moet hebben van focus hebben maar toch aan te passen aan veranderingen in de markt, dus dat je daar niet alleen één richting blijft hebben, dus dat is weer die voeling met de markt. En daarnaast denk ik dat het heel belangrijk is om een team rond je te kunnen scharen en die te motiveren.** Want die zullen ook die hoogtes en laagtes meemaken en daar is het heel belangrijk.	
Background	**De achtergrond en die dingen vind ik vaak minder van belang. Het hoeft geen ingenieur te zijn, hij hoeft geen MBA diploma te hebben.** Dat mag allemaal maar dat is voor mij geen onderscheidende criteria om op af te haken.	Business development KIC InnoEnergy
Networking skills	Om die voeling in de markt te hebben is het belangrijk om **een goed netwerk te hebben, of in ieder geval om een netwerk te kunnen opbouwen. Weerom, ik denk niet dat je dertig jaar ervaring in een bepaald veld moet hebben om daar een succesvolle start-up te kunnen leiden. Maar het netwerking in het algemeen, als netwerking en niet het netwerk zelf, dat is wel belangrijk.**	Business development KIC InnoEnergy
Organization talent	**Je ziet wel dat als je entrepreneur bent en je ontbreekt aan organisatietalent, wat veel van die entrepreneurs vaak hebben, dan zie je dat ze in het begin heel leuk producten kunnen verkopen en een netwerk hebben, maar op het moment dat het dan geleverd moet worden, dat er dan niks komt, met name bij die technische producten**.	innovation project manager KIC InnoEnergy

APPENDIX ENGLISH SUMMARY

THE TRANSFORMATION OF CLIMATE-KIC INNOVATION PROJECTS INTO STARTUPS

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ABSTRACT
Transforming Climate-KIC innovation projects into startups is a challenging solution for the problems that innovation projects currently face in reaching the goal of commercializing new products and services. This research identifies these problems by conducting interviews with innovation project managers, entrepreneurs from startups and business developers within the KIC environment. Based on this information, opportunities for the Climate-KIC regulation to facilitate the transformation are discovered and consist of an improvement of partnership regulation, intellectual property right administration, grant funding guidelines and lifetime regulation of the innovation project. The occurring problems cannot only be averted by improving the Climate-KIC regulation, but also by using the KICs FIT ME business model template designed in this research. This model is able to avert the problems that currently occur, even before the innovation project starts. It handles the commitment of partners, key value of the innovation, intellectual property regulation and stresses the need of an entrepreneur in innovation projects to reach the commercialization goal.

Keywords: Climate-KIC, innovation project, business model, startup

INTRODUCTION

Innovation is the key to economic growth and social well-being in the global knowledge economy we live in. The capacity of a society to innovate is crucial to compete on a global scale to solve emerging societal problems in this economy. In order to stimulate the development of innovations, Europe is facing a challenge to change the mind-set towards promoting an innovative and entrepreneurial culture. Despite excellent research institutes and dynamic companies, good ideas rarely reach the market in the form of new products and services. To stimulate the creation and commercialization of innovations and encourage entrepreneurship, the European Union has set up the European Institute of innovation and Technology (EIT) in 2008.

This institute is funded by the European Union and brings together leading knowledge institutes and companies to form dynamic cross-border partnerships to develop innovative products and services, start new companies and train tomorrow's generation of entrepreneurs. These partnerships for Knowledge and innovation Communities (KICs) and are set up around key societal needs, being climate change mitigation (Climate-KIC), renewable energy (KIC Innoenergy) and the next generation of information and communication technology (EIT ICT Labs). Each of these communities is funded by the EIT to bring research, business and education together to work on the commercialization of new products and services. This can be done through the formation of new startups or with innovation projects, which consist of a collaboration between research and business partners that develop innovations together for a limited amount of time and launch these to the market.

Problem definition and research questions

Collaboration between research and business faces enormous challenges. Despite considerable government financing and support, the development of such partnerships has proven to be difficult and does not always lead to products or services that are necessary to grow the global knowledge economy (Boehm and Hogan, 2013). There is an increasing interest in Europe to fund the collaboration between knowledge institutes and business to create innovations. These types of funding have a positive effect on the commercialization outcome. However how the regulation of the European funding organizations improve the rate of commercialization is unknown. The innovation projects from the KICs also bring together knowledge institutes and businesses and they are funded by the EIT. If the funding from the EIT stops at the end of these projects, it is possible that they land 'on the shelf' without reaching the commercialization goal. A sustainable solution is therefore needed to ensure that at the end of an innovation project the developed innovation is brought to the market. Climate-KIC has acknowledged the opportunity to transform these projects into startups as a possible solution.

One of the innovation projects from Climate-KIC that ends in 2014 that has the ambition to be transformed into a startup to reach the commercialization goal is Eurbanlab. This innovation project deals with the challenge to accelerate innovative developments within urban areas to achieve low carbon, sustainable and resilient cities. Eurbanlab signaled there is a lack of attention on business models for research and industry collaboration in literature and therefore requested the design of a business model template for Climate-KIC innovation projects. This model should have a positive influence on the transformation of innovation projects into startups.

To determine how the Climate-KIC regulation can influence the transformation of innovation projects into startups and to design a business model template for Climate-KIC innovation projects, the following research questions need to be answered:

- → How does the Climate-KIC regulation influence the transformation from Climate-KIC innovation projects into startups?
- → What is an appropriate business model template for Climate-KIC innovation projects that also has a positive influence on the transformation of innovation projects into startups?

Research design

This research starts with a comprehensive literature study on technology commercialization and business models. Next a case study research is conducted for which the data collection is based on semi-structured interviews and Climate-KIC documents. The collected data is analyzed to formulate opportunities for the Climate-KIC regulation in the transformation of innovation projects into startups. This analysis is used to design a business model template for Climate-KIC innovation projects. The practical use of this template is tested with the Eurbanlab innovation project and guidelines for the implementation of this business model template in the Climate-KIC organization are further elaborated. With this analysis and design, conclusions are drawn and recommendations are made.

THEORETICAL FRAMEWORK

Technology commercialization

Technology commercialization is the process of translating research knowledge into new or improved products or services that are introduced into the market, with the goal to generate economic benefits. The global knowledge economy is characterized by fast technological change, high innovation speed, shortening product life cycles and increasing complexity of products. This has caused knowledge and research to become the center of the economy. Knowledge institutes are therefore also changing their position in technology commercialization and are no longer only focused on the traditional knowledge transfer through education and basic research, but also show more interest in entrepreneurial activities to contribute to economic development (Powers and McDougall, 2005).

Despite the increase in entrepreneurial activities from knowledge institutes, inventions arising from these activities are rarely immediately ready to be converted into commercial products and services. This is a difficult process that consists out of a number of activities, being technology development, product development and business development. Technology development improves the performance, usability and other technological characteristics. Product development involves the transformation of these technologies into a product and service that can be launched to the market and fits the customer needs. Business development is about other capabilities that are needed to develop, produce and sell the technology based products or services. Since the transformation to commercial products and services needs significant investment, development and market expertise, a collaboration between knowledge institutes and the industry can facilitate the commercialization of technology (Combs and Link, 2003).

This collaboration can take several forms, like for instance research contracts, know-how and patents under license, consulting and new venture creation. The projects that show cooperative research, rather than licensing the technology are most important for the knowledge transfer. These forms of collaboration are not very obvious; since both knowledge institutes and firms need to learn to cross their organizational boundaries and build the capabilities to work with partners with a different incentive system (Bruneel et al., 2010). The project management is different for both parties; for firms the financial performance for a project is higher when it is managed in a formal and structured way, and is negatively associated with loosely managed projects. For knowledge institutes this is the other way around, giving these projects an extra challenging dimension.

Both parties also have different goals and incentives for cooperation, which could lead to conflicts and can make the collaboration possibilities harder. When making policies of collaborating, both the knowledge institutes and businesses need to create incentives for both actors to cooperate. Current policies are mainly made up to create incentives for collaboration, with no acknowledgement that in the absence of a market demand, little will be achieved. It is therefore important to address an innovation that fits the market. Publicly funded research programs could offer a solution to the challenges that these types of collaborations currently face. These research programs should bring together key partners to create innovations that address predefined market demands. Together with a framework for regulations on developed intellectual property rights and project management, publicly funded research projects could increase the commercialization of technology. In this way the EIT and the KICs offer a good platform to support the creation of new products and services.

Business models

Research has shown that business models are the key to the success of a business (Amit and Zott, 2001). These business model concepts typically capture the sources of costs and revenues together with descriptions of the products, services, market participants and the value chain position with the customers' and suppliers' benefits. However, the theoretical foundations of the business model concept still display some inconsistencies in the underlying assumptions and the term 'business model' has been used for many different terms from management literature. A central focal point in these definitions is the attempt to define business models as a term within the business' strategy.

Once a design of this business model is set, it is difficult to change due to inertia and resistance of change of the involved parties. It is therefore important to use an appropriate business model template at the start of a project that fits within the strategy of the organization. To capture, visualize and understand the organization logic in an easy and structured way, business model concepts are designed (Osterwalder and Peigner, 2010). In this research the business model perspective is examined with the 'Osterwalder business model canvas', due to the practicality and clearness of the model and the fact that this model is used within Climate-KIC to discover business opportunities for innovation projects. The Osterwalder business model canvas is visualized in figure 1 and consists of nine different building blocks, which are explained in table 1.

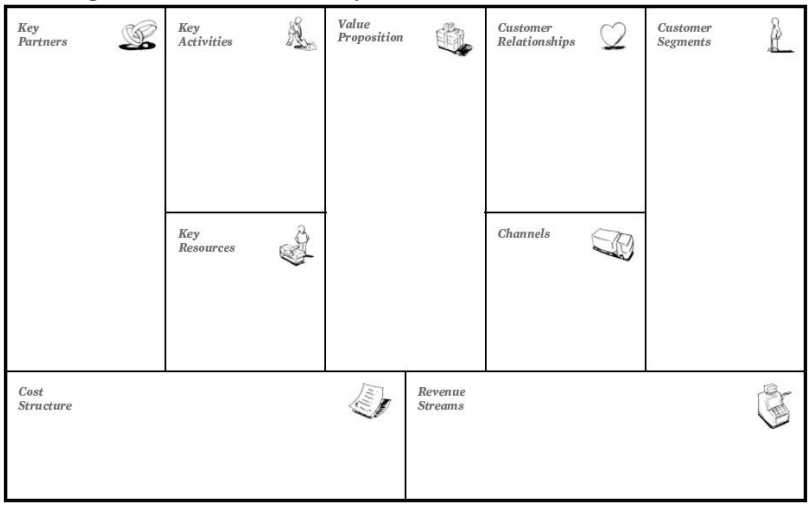

Figure 1 Osterwalder Business Model Canvas (Osterwalder and Peigner, 2010)

Table 5 Building blocks of the Osterwalder Business Model Canvas

Building blocks	Explanation
Value proposition	The value proposition identifies the design, price, cost reduction, risk reduction, accessibility and convenience when using or buying the product or service. It describes the product in a way that customers are satisfied with the product and that it creates value for them.
Customer segments	The center of all business models is the customer. To satisfy the needs, a business needs to know the potential customers and have a grip on their social, financial and geographical situation.
Channels	Channels have the purpose to create awareness of the product or service among the customers, can handle evaluation on the delivered value and are a mean for purchasing and delivering the product or service and handles after sales services.
Customer relationships	Customer relationships can be identified in different ways for specific customer segments. This can be for example personal assistance, self-service, automated services, communities to help solve each other's problems and co-creation, which consist of creating value together with the customers (e.g. YouTube).
Revenue streams	The revenue streams determine the strategy a business uses to generate cash from each customer segment.
Key partners	For determining the key partners it is necessary to know what the partners deliver and what the business has to do in return.
Key resources	The key resources are meant to create value for the customer. They are key assets for business operation and can be physical, intellectual, human or financial resources.
Key activities	The key activities consist of the actions to keep the business model running and to execute the value proposition. Examples are: production, problem solving, consultancy or networking.
Cost structure	This building block represents the costs for running the business.

When identifying the main three factors of interest for the design of a business model, the content, structure and governance are crucial (Bock et al., 2011). The content reflects the selection of activities within the project. The structure describes how these activities are linked together and governance reflects on which parties lead the activities. The Osterwalder business model canvas is suited to capture these three factors for startups. The canvas is also used for innovation projects, however due to the complex nature of the governance structure of these projects and the heterogeneous partnerships, this canvas might not the basis of an appropriate business model template.

CASE STUDY RESEARCH

An exploratory case study research is conducted to analyze how Climate-KIC regulation has an influence on the transformation of Climate-KIC innovation projects into startups. The data that is collected consists of semi-structured interviews among innovation project managers, entrepreneurs from startups and business developers within the three KICs. The quality of this research is improved by determining the reliability and validity of the data collection.

The conducted interviews and documents from Climate-KIC, EIT and other European institutes, form the base to perform the data analysis. The analysis of the quantitative interview data consists of a grounded theory approach, based on open coding, theoretical coding and selective coding.

ANALYSIS OF THE CLIMATE-KIC REGULATION OPPORTUNITIES

The analysis points out that the Climate-KIC regulation still has room to improve in order to facilitate the transformation of innovation projects to startups. Interviews with innovation project managers, entrepreneurs from startups and business developers have brought to light the opportunities that Climate-KIC has in terms of regulation about partnerships, intellectual property, funding, the lifetime of the innovation projects and the involvement of a business coach. The current Climate-KIC partnership regulation does not always include organizations with relevant specialized knowledge to create new products or services as a partner of innovation projects. This has an influence on the transformation into a startup, since new products or services form a commercialization base of a startup. Most of the times the specialized organizations are SME's with limited financial means. An opportunity to involve these parties in innovation projects could be to create a funding program to support the SME's to develop the innovation. To middle out the financial investment of the other partners of the innovation project, they could receive shares on the developed innovation.

The Climate-KIC intellectual property regulation has an influence on the transformation of innovation projects into startups, because this regulation can hinder the commercialization of new relevant products and services, which is the base for a startup. An opportunity to solve this is handing over all created intellectual property to the startup that is formed after the termination of the innovation project. All the partners from the innovation project consortium would then receive shares of this startup. These shares are based on the commitment of each partner and input in the innovation project.

For the funding regulations another system can be used that is much more attractive for Climate-KIC, as well as for the partners. Instead of refunding partners for worked personnel hours, travel and accommodation costs, the funding should be based on deliverables. If the partners are fully responsible for these overhead costs and are being paid for delivered quality instead of the worked hours, the quality of the innovation will be higher for Climate-KIC, also meaning higher potential revenues for the partners. This has a positive effect on the transformation of innovation projects into startups, since this delivers higher quality products and services that can be commercialized.

The lifetime of an innovation project represents the time that the consortium partners of an innovation project have to develop new products or services. It is not always viable to create innovations that are ready to be commercialized within the scope of an innovation project. This has a negative impact on the transformation into a startup. To ensure viable products or services, the innovation projects should be proceeded by Climate-KIC pathfinder projects. These projects cost significantly less than the innovation projects and are created to investigate whether there is a market demand for the innovation in question. If there is no market demand, the project can be terminated without wasting valuable EIT funding.

A last good opportunity for Climate-KIC to have a positive influence on the transformation of Climate-KIC innovation projects into startups is the intense involvement of a business coach from the start of an innovation project. If these are involved, a better view on the market potential is obtained and the scalability options in Europe are clearer. The business development can support the innovation project managers in all problem areas they face in creating a sustainable business from this innovation project.

DESIGN OF A BUSINESS MODEL TEMPLATE FOR INNOVATION PROJECTS

The business plan of 2014 for Climate-KIC has as a point of action to focus more on the business model for innovation projects to ensure ideation leads to commercial application and success. The business model that I designed is visualized in figure 2 and is called the 'KICs FIT ME' model. The five main building blocks are: Finance, innovation, Team, Market and Entrepreneur. The four problem points are Key value, IPR, Commitment and Sales. These are further elaborated in table 2.

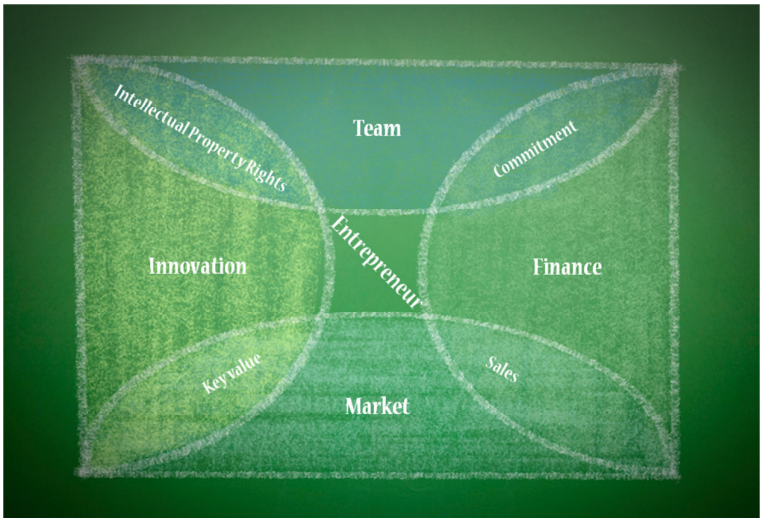

Figure 2 KICs FIT ME model

Table 2 Explanation of the KICs FIT ME model

Building blocks	Explanation
Key value	The market with the customers and the created innovation must have the overlap that the innovation addresses a need from the customers. To get insight to see if the innovation really solves one of their problems or needs, customer research is done by addressing potential customers.
IPR	The problems for the intellectual property arrangements of the innovation projects can be solved by stating in the consortium agreement that all intellectual property will be handed over to the startup after the termination of the innovation project. All the partners in the innovation project could then receive shares of this startup, that are based on annual reporting of their commitment and input in the innovation project.
Commitment	One of the first challenges at the beginning of an innovation project should be to ensure that all partners bring a relevant investment in the project according to their own incentives and the common goals of the project.

	This means that the different parties need to collaborate and invest in long-term relationships to overcome barriers in time, place and academic disciplines to create a maximum synergy between all parties. It is also necessary to trigger sufficient trust among the partners and create an organizational structure with an intelligent performance indicator system to ensure the success of the project. The commitment for the launch of the startup should take a center role. Who is responsible for financial support after the innovation project ends if the startup cannot be a self-sustaining business yet? A plan should be set up on how this startup will be financed and which partner will be responsible for the search of investors, paying customers, grants, etc.
Sales	It is important to create a self-sustaining business, so before creating the innovation, the team should ask themselves: are customers going to pay for this innovation? How can revenues be created? It is important to create something the market is going to pay for.
Finance	The financial input of the different partners remains the KIC Added Value Activities and KIC Complementary Activities that are registered for each partner in the annual Partner Grant Agreement. However, it would be more interesting to refund the partners based on their deliverables instead of worked hours of personnel, etc.
Innovation	The product or service that is developed needs to be an innovative climate-relevant solution that has the ability to be launched to the market in the form of a self-sustaining economic activity after the innovation project ends. It is created based on research of the university or knowledge institute and supported by the marketing skills and customer knowledge of the industry and needs to fulfill the Climate-KIC quality criteria for innovation projects.
Team	In order to create an innovative climate-relevant solution that has the ability to be launched to the market in the form of a self-sustaining economic activity, it is important that the collaboration between the consortium partners is good enough to form a solid base for the creation of a startup. The individual representatives from the different partners in the consortium of an innovation project have an important effect on the collaboration, since one of the most prominent factors that predicts a successful university-industry interaction is related to inter-personal exchanges.
Market	When searching for market opportunities, next things should be kept in mind: what are the market needs, what is the size, who are the competitors and is there growth potential (Blank and Dorf, 2012)? Since this business model template is used for the creation of new innovative products and services, it is hard to know if there are really customers for the developed products and services and thinking in terms of solving the customers problem, it is interesting to know why competitors did not already address it and why the problem is so hard to solve.
Entrepreneur	There is a need for an entrepreneur to take the innovation project to a startup. There are different opinions regarding what type of person this should be.

However, some common characteristics are necessary to be fulfilled in order be successful. First it is necessary that it is someone that knows the market and has marketing skills to bring the product/service to the market. This person should be a member of the team from the beginning and have leading skills to guide the team. The most important aspect is that this person needs to be technical; a technician can be taught how to do marketing and finance, but the other way around is much harder and maybe even impossible. It might be challenging to find people like this, however if someone is involved in the beginning of the project, this person can be trained in the skills he or she lacks. In this way the entrepreneur has the chance to develop himself during the lifetime of the innovation project in order to prepare to lead the startup. A nice opportunity could be to provide Climate-KIC master students and PhD students with entrepreneurial training and in a later stage involve them in the innovation projects to make them ready to be the next generation of entrepreneurs.

This model was validated with the Eurbanlab innovation project, which is ending in 2014 and has the ambition to be transformed into a startup. Since the KICs FIT ME model captures the problems that Eurbanlab is facing in becoming a startup, this could be an appropriate business model template for the research industry collaboration of Climate-KIC innovation projects. More research on other innovation projects is needed to support the validity. Within the scope of this research it was only possible to perform one test case. The implementation of the KICs FIT ME model in the Climate-KIC organization is also examined and the result is that this can be done relatively easy. There is time enough to brief the partners of the organization on how this model works and what the purpose is.

CONCLUSION & DISCUSSION

Transforming Climate-KIC innovation projects into startups is a challenging solution for the problems that innovation projects currently face, regarding the commercialization of new products and services. At the moment the Climate-KIC regulation has a negative influence on this transformation, due to the restricted partnership regulations, intellectual property right administration, grant funding guidelines and lifetime regulation of these innovation projects. The KICs FIT ME business model that is designed within the scope of this research can be seen as an appropriate business model template for the research and business collaboration in Climate-KIC innovation projects. This template has a positive influence on the transformation of Climate-KIC innovation projects into startups, since it addresses problems that the innovation projects are currently facing in this transformation. Climate-KIC innovation projects are publically funded collaborations between research and industry partners for a limited amount of time. Since the innovation projects of KIC Innoenergy and EIT ICT Labs are based on the same characteristics, the KICs FIT ME model can be generalized for this purpose and can also be used for these innovation projects.

The commercialization through a startup is not the only commercialization option and forming a startup is not a specific goal for these innovation projects. It would therefore also be interesting to explore other options, like having the commercializing partner within the project consortium or licensing the intellectual property to Climate-KIC, who can then chose a partner or startup to commercialize it.

The influence of the formal and informal organization within the KICs might also be a challenging topic to explore, due to the statements of the different interviewees regarding the importance of this subject. A last interesting topic to examine is the viability of the KIC organizations, since it is alarming that Climate-KIC has to cut costs due to increasing debts. How does this influence the future of the organization and what is a sustainable solution to solve this challenging financial burden?

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After finishing the master of industrial building sciences in Belgium, I wanted to broaden my horizon and focus more on the management of construction projects. The master Construction Management & Engineering enabled me to do so and also gave me the opportunity to explore the world of research and industry collaboration. This thesis gains insight in the complex KIC organizations and contributes to policy formation in this field.

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2012 – 2014 Master Construction Management and Engineering (TU/e)
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DE TRANSFORMATIE VAN CLIMATE-KIC INNOVATIEPROJECTEN NAAR STARTUPS

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07-07-2014

Samenvatting
De transformatie van Climate-KIC innovatieprojecten naar startups is een uitdagende oplossing voor de problemen die zich op dit moment voordoen in het bereiken van het doel om nieuwe producten of diensten te commercialiseren. Dit onderzoek identificeert deze problemen op basis van interviews met innovatieproject managers, ondernemers uit startups en business developers binnen de KIC omgeving. Met deze gegevens worden mogelijkheden binnen de Climate-KIC regelgeving geschetst om de transformatie te faciliteren. De mogelijkheden bestaan uit een verbetering van de partnerregelgeving, de administratie van intellectuele eigendomsrechten, de financieringsrichtlijnen en de regulering van de looptijd van innovatieprojecten. De problemen kunnen niet alleen worden opgelost door het verbeteren van de Climate-KIC regelgeving, maar ook door het gebruik van het 'KICs FIT ME' model dat ontworpen is in dit onderzoek. Dit model is in staat om de huidige problemen te voorkomen, nog voordat het innovatieproject start. Het waarborgt de inzet van partners, de waarde van de innovatie, intellectuele eigendomsregelgeving en benadrukt de noodzaak van een ondernemer in innovatieprojecten om het commercialiseringsdoel te waarborgen.

Trefwoorden: Climate-KIC, innovatieproject, business model, startup

INTRODUCTIE

Innovatie is de sleutel tot economische groei en maatschappelijk welzijn in de huidige globale kenniseconomie. Om de ontwikkeling van innovaties te stimuleren, staat Europa voor de uitdaging om een innovatieve en ondernemende cultuur te promoten. Ondanks uitstekende onderzoeksinstituten en dynamische bedrijven, komen goede ideeën zelden op de markt in de vorm van nieuwe producten en diensten. De innovatieprojecten van Climate-KIC, gesubsidieerd door het Europees Instituut voor innovatie en technologie (EIT), brengen onderzoek en industrie samen met als doel de commercialisatie van nieuwe producten en diensten op het gebied van klimaatverandering te stimuleren.

In de realiteit leiden de innovatieprojecten vaak niet tot deze commercialisatie en zo missen deze projecten het doel dat KIC voor ogen heeft. Het is soms niet duidelijk wat er gebeurt met de gecreëerde innovaties als deze projecten stoppen en er niets op de markt is gekomen.

Dit onderzoek focust zich op de mogelijkheid om een innovatieproject om te zetten naar een startup om het commercialisatie doel te bereiken. Hiervoor is een case studie onderzoek opgezet, op basis van semigestructureerde interviews en Climate-KIC documenten. De verzamelde gegevens worden geanalyseerd om de mogelijkheden voor de Climate-KIC regelgeving in de transformatie van innovatieprojecten in startups te formuleren. Deze analyse wordt verder gebruikt om een business model template voor Climate-KIC innovatieprojecten te ontwerpen. Het praktische gebruik van deze template is getest met het Eurbanlab innovatieproject en richtlijnen voor het gebruik van dit business model in de Climate-KIC organisatie zijn verder uitgewerkt. Met deze analyse en het ontwerp, worden conclusies getrokken en aanbevelingen geschreven.

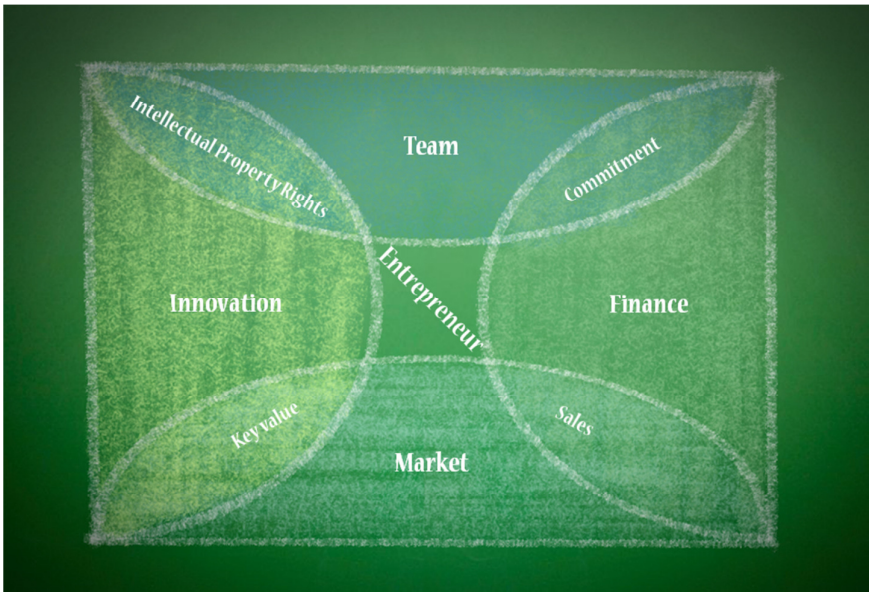
ANALYSE VAN DE KANSEN VOOR DE CLIMATE-KIC REGELGEVING

De analyse wijst erop dat de Climate-KIC regelgeving nog ruimte heeft om te verbeteren om de transformatie van innovatieprojecten naar startups faciliteren. De mogelijkheden betreffen partnerregulatie, intellectuele eigendomsrechten, projectfinanciering en de levensduur van de innovatieprojecten. De partnerregulatie van Climate-KIC kan verbeterd worden door partijen toe te laten in innovatieprojecten die het meest gedreven en gespecialiseerd zijn om innovaties te ontwikkelen. Dit zijn vaak de kleinere bedrijven en deze zouden betrokken kunnen worden door middel van een subsidieprogramma. Deze kleinere bedrijven zouden dan subsidie krijgen om de innovatie te ontwikkelen en de andere partners van het innovatieproject ontvangen dan minder subsidies, maar in ruil aandelen op de ontwikkelde innovatie. De problemen betreffende de Climate-KIC intellectuele eigendomsregelgeving kunnen opgelost worden door voorop te stellen dat de rechten op de ontwikkelde innovatie geschonken worden aan de startup. Alle partners van het innovatieproject ontvangen dan aandelen van deze startup, gebaseerd op de input in het innovatieproject. Het toepassen van een andere subsidieregulering voor de innovatieprojecten is ook een kans voor Climate-KIC. In plaats van het uitbetalen van partners op basis van de gewerkte uren van het personeel, biedt een financiering op basis van geleverde prestaties meer voordeel. Zo is de kwaliteit van de innovatie groter voor Climate-KIC, wat ook hogere potentiële opbrengsten voor de partners kan betekenen. De levensduur van een innovatieproject heeft ook een invloed op de transformatie van innovatieprojecten naar startups. Deze projecten lopen normaal gezien één tot drie jaar en niet elke idee leidt tot een leefbaar project. Daarom is het interessant de innovatieprojecten te laten volgen op marktonderzoek projecten om te kijken of een idee leefbaar is en als dit niet zo is, kan dit project in een vroeg stadium gestopt worden.

ONTWERP VAN EEN BUSINESS MODEL VOOR INNOVATIEPROJECTEN

Om de huidige problemen die de transformatie van innovatieprojecten naar startups bemoeilijken te voorkomen, is een business model voor Climate-KIC innovatieprojecten ontworpen. Dit model is in staat deze problemen aan te pakken, nog voordat het innovatieproject start. Dit model is het ‘KICs FIT ME model’ en is gevisualiseerd in figuur 1.

Het model bestaat uit vijf bouwstenen: Finance, Innovation, Team, Market en Entrepreneur. De vier knelpunten tussen deze bouwstenen die zich op dit moment voordoen bij de transformatie naar een startup zijn: Key value, Intellectual property rights, Commitment en Sales.



Figuur 1 KICs FIT ME model

De finance bouwsteen omschrijft wat de partners aan financiële middelen in het project inbrengen. Het is hierbij noodzakelijk dat een duurzaam systeem gebruikt wordt om deze inbreng te evalueren. Het team voor het innovatieproject dient als een hecht team te functioneren en hier dient voldoende aandacht aan besteed te worden omdat dit een significante bijdrage kan leveren aan de ontwikkeling van de innovatie. De innovatie dient gebaseerd te zijn op een idee dat een marktvraag aanspreekt. De markt dient voor de aanvang van het innovatieproject al onderzocht te zijn om te kijken of de innovatie leefbaar is. In het midden van het model staat de entrepreneur. Deze vormt de schakel tussen de verschillende bouwstenen en dient onderdeel te zijn van het team, kennis te hebben van de markt, alsook financiële kennis. Het is bovendien belangrijk dat deze persoon technische kennis heeft over de ontwikkelde innovatie. De entrepreneur dient aan het begin van het project betrokken te zijn om zo een eventueel gebrek aan kennis over één van de bouwstenen verder te ontwikkelen en genoeg begeleiding te krijgen om te zorgen dat deze persoon in staat is succesvol de uiteindelijke startup te leiden.

Als eerste knelpunt tussen deze bouwstenen omschrijft de Key value of de geleverde innovatie echt een nood van de klant aanspreekt en Sales beschrijft of klanten echt willen betalen voor deze innovatie. Het knelpunt intellectual property rights omschrijft hoe de regeling hieromtrent is getroffen en commitment behandelt hoe de verschillende partners zich inzetten om het innovatieproject om te vormen naar een startup.

Dit model is uiteindelijk gevalideerd met het Climate-KIC innovatie project ‘Eurbanlab’, dat eind 2014 wilt transformeren naar een startup.

Deze validatie toont aan dat het model alle problemen aanpakt die het project op dit moment tegenkomt. Dit toont aan dat het 'KICs FIT ME model' praktische implicaties kan hebben, hoewel meer test cases nodig zijn voor de validatie.

Er is ook een implementatieplan opgesteld om dit project in te voeren als tool bij de vorming van innovatieprojecten. Dit plan omschrijft de verschillende betrokken partijen bij de invoer, mogelijke weerstand en hoe het succes van dit model gemeten kan worden. De uitkomst is dat dit model op een relatief eenvoudige manier toegepast kan worden in de Climate-KIC organisatie.

CONCLUSIE & DISCUSSIE

De huidige Climate-KIC regulatie heeft een negatieve invloed op de transformatie van Climate-KIC innovatieprojecten naar startups. De mogelijkheden om de regulatie aan te passen om deze problemen aan te pakken, gaan over partnerregulatie, administratie van intellectuele eigendomsrechten, financieringsrichtlijnen en de regulering voor de looptijd van innovatieprojecten. De problemen kunnen niet alleen worden aangepakt door het verbeteren van de Climate-KIC regelgeving, maar ook door het gebruik van het 'KICs FIT ME' business model dat ontworpen is in dit onderzoek. Dit model is in staat om de huidige problemen te voorkomen, nog voordat het innovatieproject start. Het waarborgt de inzet van partners, de waarde van de innovatie, intellectuele eigendomsregelgeving en benadrukt de noodzaak van een ondernemer in innovatieprojecten om het commercialiseringsdoel te waarborgen.

De commercialisatie van de ontwikkelde innovaties met behulp van een startup is niet de enige optie tot commercialiseren die de innovatieprojecten hebben. Een startup is ook geen specifiek doel van dit soort projecten. Het zou interessant zijn om hiernaast andere opties te onderzoeken, zoals bijvoorbeeld het licenciëren van intellectuele eigendomsrechten. Een ander interessant onderzoek zou kunnen zijn te kijken hoe de informele en formele organisatie de commercialisatie van technologie beïnvloedt binnen Climate-KIC. Deze thesis baseert zich interviews en de formele data van de Climate-KIC organisatie, maar tijdens de interviews kwam meerdere malen het belang van de informele organisatie naar boven, die de formele regelgeving vaak vervangt. Het is interessant te kijken in hoeverre dit zo is en hoe dit vastgelegd kan worden om de leefbaarheid van de Climate-KIC organisatie te waarborgen.