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TITLE: Stakeholders participation in the Innovation Process

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Stakeholder participation in the Innovation Process

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Abstract

This master thesis aims to study the stages in which startups include relevant stakeholders in their innovation process. The study seeks to contribute and enrich the innovation management literature regarding stakeholder inclusion. It combines existing literature with the RRI field and adds non-economic stakeholders into the mix, with the aim to enhance the innovation management capabilities of Norwegian startups by conducting a research on the members of an organization in the Oslo region.

The findings suggest that innovation is widely accepted and encouraged, it also shows that firms have dynamic capabilities since they are able to reflect, absorb and adapt to some degree their innovation based on stakeholder inclusion but that these interactions focus on primary economic relationships with informal meetings and networking as the main method. The evidence also shows that most stakeholder interactions are being held at the launch and post launch stages of a new product or service development. The study concludes making an argument for the inclusion of non-economic stakeholders to be done at earlier stages of the innovation process.

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List of Abbreviations

3D	Three dimensional
3G	Third generation
4G	Fourth generation
ABS	Antilock braking systems
AI	Artificial intelligence
AM	Agile methodology
BAN	Business Angels Norway
CEO	Chief Executive officer
EU	European Union
FB	Facebook
FEI	Front end of innovation phase
IOT	Internet of things
NAP	Nordic Angel Program
NGO	Non-governmental organizations
NPD	New product development
OIH	Oslo International Hub
R&D	Research and development
R&I	Research & Innovation
RI	Responsible innovation
RRI	Responsible research and innovation
SD	Software development
TCI/IP	Transmission control protocol/ Internet protocol
Wi-Fi	Wireless networking technology

1. Introduction

Defining a product/market entry strategy is a crucial step in the creation of a company, such is the case in the creation of a startup. Although no official definition they can be described as a newly created entity aspiring to grow fast within uncertainty (Halle & Ruel, 2016). These young companies (usually less than 5 years) are often innovative in terms of product, service or business model that they bring to the market and have an aim to scale both in terms of employees and international markets where they operate.

Startups are often introducing significant technological innovations that surpass and challenge those companies that already exist in the market. Since the development of Silicon Valley these often technology driven companies serve as a starting point to measure a country's innovative capabilities and technological advances. Despite this, at the entry stage they face a lack of valuable assets such as experience, reputation, deeper understanding of their customers and brand recognition that the competitors already have, these assets represent a hurdle that startups must overcome (Hashai & Markovich,2017). Within this already competitive economy, startups face a challenging landscape since the nature of their business requires constant innovation and ingenuity. Additionally, technologies that are poised to dictate the future such as AI, blockchain and IOT provide a continuous advantage in the marketplace.

This constant innovation applies as well to their innovation management strategies since in principle they can create a competitive advantage and change a company's positioning. A management innovation represents a starched difference from the traditional principles of managerial practices and processes with the aim to modify the way traditional management is carried out (Tidd & Bessant, 2005). Despite this, not that many companies have a well-defined process that continuously implements management innovation (Hamel, 2016).

Stakeholder inclusion in the innovation process and management of startups is a growing discussion among policy makers as a tool capable of making a differential impact in the development of a product/service and serve as a mean of integrating large groups of people

together such as civil society, legislators, nonprofit organizations and end users. As one famous researcher noted:

> *"The 21st Century is one of "Managing for Stakeholders." The task of executives is to create as much value as possible for stakeholders without resorting to tradeoffs. Great companies endure because they manage to get stakeholder interests aligned in the same direction." — R. Edward Freeman, 1984.*

For startups, the participation of stakeholders can serve as a method to develop their service/product and can enhance their value proposition by overcoming legitimacy questions that arise in their development process and therefore ensure a better acceptance and diffusion of their innovation. Within innovation management literature, stakeholder theory points out that managers should involve stakeholders in their decision-making process (Schomberg, 2013). This includes a group or individual that can be affected or affect the welfare of the company (Jensen, 2001). They can be classified as internal or external groups and as economic and non-economic actors (Blok et al, 2015). Internal stakeholders represent those internal to the organization such as shareholders and employees. The external stakeholders are the social and political representatives such as governments, communities, policy makers, special interest groups, competitors, NGOs, consumer advocates, the media and environmentalists, (Maines da Silva, Bitencourt & Iakovleva, 2019).

Within innovation management literature, stakeholder inclusion has been studied for decades. Since Freeman (1984) who introduced it as a combination of management principles, stakeholder theory has changed and is used today to analyze different scenarios in non-profit organizations, small firms, public sector among others (Imre, 2016). The need for stakeholder theory to be more inclusive and dynamic was made aware by different scholars (Fassin 2008; Beaulieu & Pasquero 2002; Flak et al. 2008 Lamberg et al. 2008;), this paved the way for methods such as design thinking, agile methods, dynamic capabilities among others to become more mainstream within innovative companies and innovation management literature. Nevertheless, these studies have been mainly focused on economic stakeholders. Thus, empirical research on stakeholder participation in innovation management specifically in startups remains narrow.

Others within academia stressed the need for stakeholders to be more included in the research and argued that their contribution hasn't been analyzed enough as an important part of the innovation development process. Owen (2012) described how research and science need to be held more accountable and by this a new approach to research defined as Responsible Research Innovation gain traction among academia. This new perspective of RRI calls for a wider society inclusion of both economic and non-economic stakeholders, it's aim is to find mechanisms that include the general public into scientific developments and involve them in grand societal changes. Its relevance as an instrument for policy making was further defined in Brussels in 2011 at the Directorate of General Research when it was included on the discourse and ultimately an expression of intent to integrate RRI portrayed its momentum and the fact the policy makers understood the importance of the relationship between science and the wider society (Owen et al, 2012). The 4 pillars or so-called dimensions of RRI are anticipation, reflexivity, inclusion, and responsiveness (Stilgoe et al., 2013). The inclusion dimension will be the focus of this study, using it to measure the performance of the startups that participated in the research.

Therefore, an analysis of stakeholder inclusion in the innovation process in the Oslo region of Norway will be presented with the purpose of understanding how startups reach to stakeholders and how their inputs contribute to their decision making. The researcher's objective is to enrich the innovation management literature and specifically stakeholder inclusion by combining it with the RRI field and adding non-economic stakeholders into the picture. It is also the aim that similar projects can be undertaken to further develop the innovation management capabilities of Norwegian startups.

1.1 Problem statement

Stakeholders are any group or individual be affected or affect the fulfilment of the goals of an organization (Maines da Silva, Bitencourt & Iakovleva, 2019). Therefore, stakeholder inclusion can be defined as the set of practices an organization takes on with the aim to involve stakeholders in a positive way (Greenwood, 2007).

Stakeholder inclusion has an important role in determining the viability of a service/product and it's fit to a market. Additionally, depending on the stage of the innovation process that the input of a stakeholder is considered, it can potentially lead to a change of course in later stages of the process such as in the market launch stage. This can have many implications in the development of a successful startup, because if they are reaching stakeholders too late this translates into additional time, resources and lost revenue. Despite this, there is little empirical evidence that can decisively demonstrate: 1. Who are the agents that orchestrate stakeholder's inclusion? 2. When stakeholders participate? 3. How stakeholders inclusion contributes to the innovation process and what kind of innovation? 4. Who are the stakeholders typically invited to participate in the process? (Maines da Silva, Bitencourt & Iakovleva, 2019).

Startups due to their innovative nature represent an ideal business where valuable data and insights can be obtained in order to understand the market and better adapt to a competitive an innovation driven economy. However, within stakeholder theory the prevailing research is based upon for the most part larger and established firms (Halle & Ruel, 2016). Then we can foresee an opportunity to contribute to the stakeholder inclusion discussion by conducting a research within economic and non-economic stakeholders.

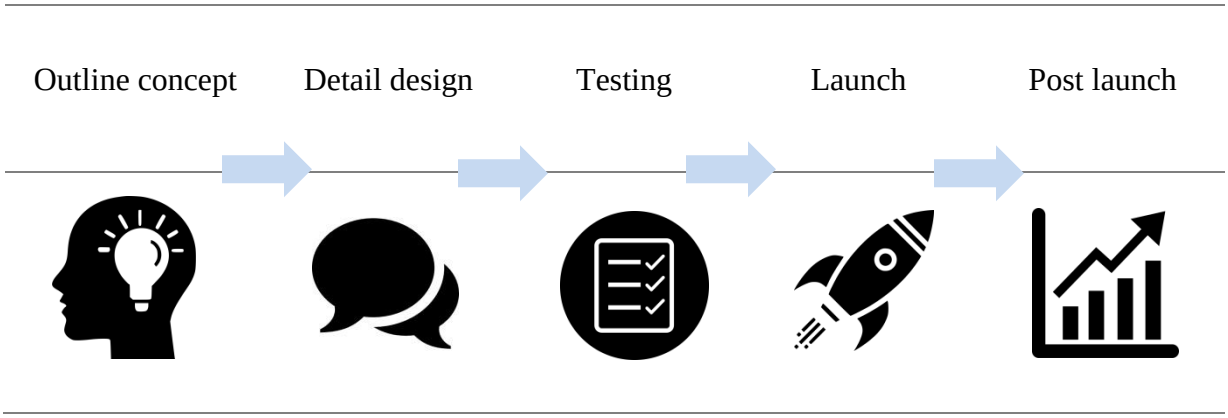
In this sense, this master thesis aims to understand the stages in the innovation process that startups in the Oslo region include stakeholders. To achieve this, an organization was approached to conduct research on its members. This allowed a concrete analysis of how startups in this region operate regarding inclusion of stakeholders and the stages of the innovation process this is taking place.

The research question for this study is the following:

How stakeholder's inclusion contributes to the innovation process?

The question places at the center of the research the stakeholders by breaking down how and in which stage of the creation of a new product or service they participate. Additionally, it acknowledges the fact that the Innovation process consists of 5 stages: outline concept, detail design, testing, launch, post launch and that by understanding in which stage of these processes startups are reaching to stakeholders, these companies can develop products or services that reflect the needs of the market (Tidd & Bessant, 2014). Figure 1 is used as a base for this research by showing the stages of the innovation process which the research question will be based upon.

Figure 1: Overview of research question based on the innovation process



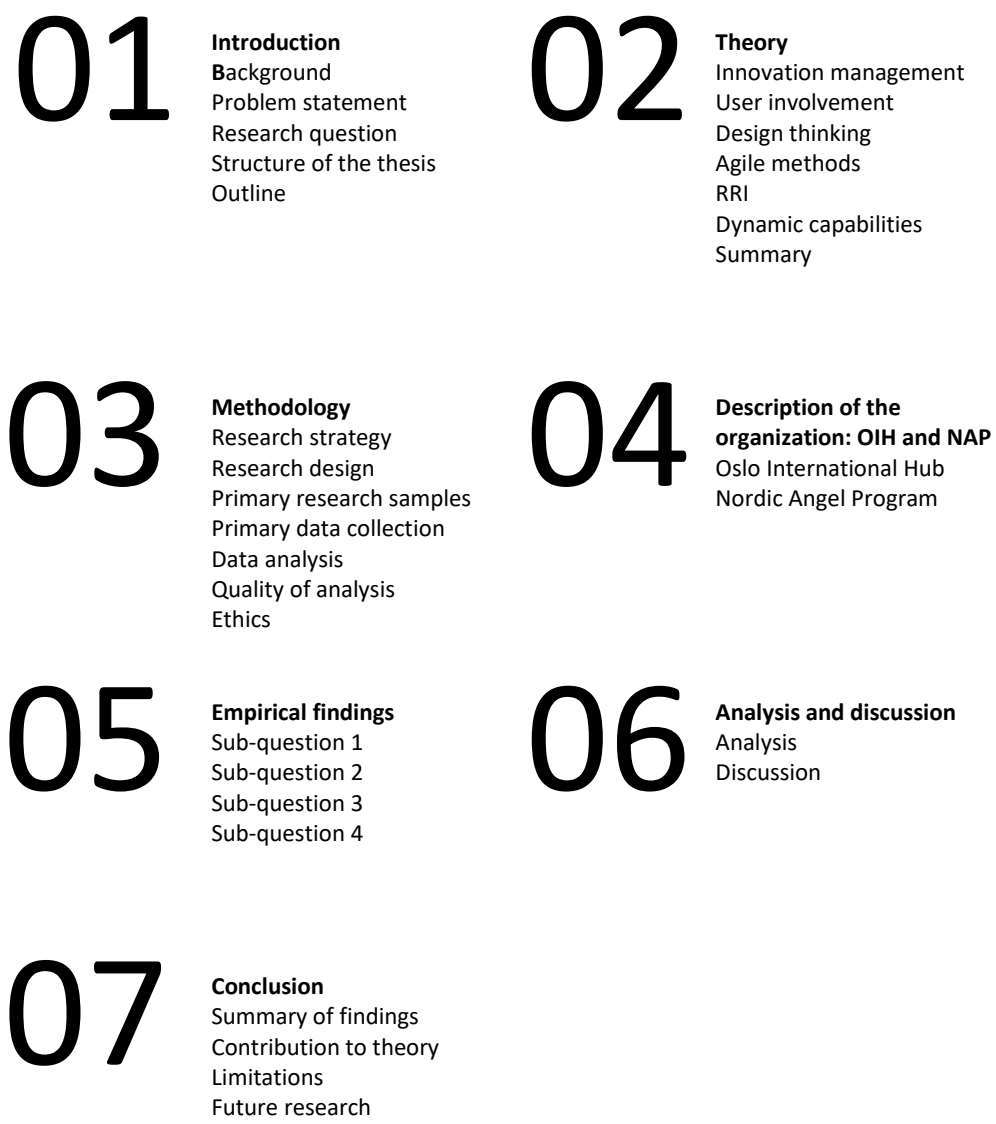
The following sub questions have been formulated in order to address the above research question:

1. Who are the stakeholders typically invited to participate in innovation process?
2. At what stage of innovation process do stakeholders participate?
3. How does stakeholder inclusion relate to absorption and adaption of knowledge?
4. How does stakeholder inclusion relate to innovation capability of the firm?

1.2 Structure of the thesis

This master thesis is divided into seven chapters with its corresponding subsections. The structure of the thesis is shown in Figure 2 in which an introduction to every chapter precedes the core content.

Figure 2: Structure of the thesis



2. Theory

The following theoretical framework has been divided into six parts. First, we will define innovation management with a focus on user role in innovation management. Afterwards, we will explain and explore different methods that involve stakeholder inclusion such as user involvement, design thinking, agile methods, responsible innovation and dynamic capabilities. This will give a theoretical framework to support the research and serve as the main body of literature. Finally, a summary of the literature will be presented with a brief comment on stakeholder inclusion and innovation management theory moving forward.

2.1 Innovation management

Today we talk about innovation more than ever. Bringing to discussion the term innovation and how to manage innovation is something that is omnipresent these days and tremendously important for staying competitive in the market. It has been used a very broad definition of innovation, but from an economic perspective, we can agree that innovation is developing solutions that meet customer needs and builds new markets (Tidd & Bessant, 2015), while bringing benefits for the organization and making significant contributions to society.

Nowadays, various practices of innovation management play a crucial role in different industries and sectors. Common challenges and more often high rate of failures of innovative projects are at the top of the list of concerns for both industries and academics. The main reasons that influence the success of a project are ¨stakeholders influential attributes and more importantly, their understanding and effective utilization¨ (Rajablu, Marthandan & Yusoff, 2014). In this study, we will discuss stakeholder theory combined with innovation management and with a few of complementary concepts, such as: user involvement, design thinking, agile methods, responsible research innovation and dynamic capabilities in order to better understand how essential stakeholder's inclusion is in managing innovation and especially at what stage of the innovation process they should be included.

The concept of innovation management uses as a base some ideas proposed by the Austrian professor of political economy Joseph Schumpeter (1934), who emphasized innovation as a necessary factor for an economic growth. By definition, ¨Innovation management raises the interest of different actors in the field of management such as academics and practitioners ¨ (Gariggos, Igartua & Peiro, 2018). According to Birkinshaw, Hamel & Mol, (2008), management innovation could be defined as the invention and implementation of a managerial technique, process, practice or structure that is new and is conceived to further implement the goals of the organization.

This and many other definitions of innovation management show that it is possible to see slightly different concepts, but a very unique and simple explanation would be that innovation management is changing in terms of what managers do and how they do (Hamel, 2006). According to Julian Birkinshaw (2015), a British academic, innovation management has the task to help companies to organize and structured themselves in a more effective way. An essential part would mostly be in focusing how employees can become more productive, more engaged and more empowered, while they are working hard on innovative ideas.

In the article ¨The why, what, and how of management innovation¨ by Gary Hamel (2006), it has been emphasized the question why the management of innovation is important and how can organizations learn to beat the competition and become management innovators. Showing different examples of some of the most famous brands and companies in the market, he has presented management innovation as the secret to success. By discussing how to become a management innovator, he is proposing commitment to an important problem in management. “The bigger the problem, the bigger the opportunity for innovation. While big problems don’t always produce big breakthroughs, little problems never do.” (Hamel, 2006).

In managing innovation, an important task is to develop the appropriate list of stakeholders and incredibly valuable is that they are involved from the ground up. An early, effective engagement key stakeholders help to capture and maintaining core business value and to build a cohesive vision for the future. A wide range of studies (see Freeman 1984;1994, Blok et al. 2015), suggest that understanding the potential impact of stakeholders and how actually

both internal and external stakeholders are influential in every innovation process is of the essence. Stakeholder early inclusion and generally the focus on stakeholder satisfaction leads to better performance outcomes and can be considered as the key factor for competitive success.

2.2 User involvement

Many researchers agree that the 21st century faces a huge scale of innovation failures. Deficiency of a customer-centric oriented companies to identify and meet real user needs and factor of general market orientation, can be considered as a common cause of the high innovation failure rate (Leary & Kaulartz, 2019). The users represent an important asset in the process of innovation, and they represent a rich source of innovation. Getting closer and focusing on the customer at their ground level would be one of the key lessons for every successful innovative company. The user often is ahead in terms of innovation, early prototyping and experimenting are mostly due to their needs and frustration which in time become mainstream innovations (Tidd&Bessant,2014).

Lego is an excellent example of user involvement and successful collaboration with customer communities. Through the Lego Ideas platform, it is possible to submit your ideas together with photos or 3D rendering and all Lego Ideas members can vote for its favorite idea. All proposed projects stay In Lego Idea site and is available for voting up to two years, where the project needs to get 10 000 votes in order to be accepted and realized. After 10 months of realization, this is exactly the way how mini Lego of the popular American comedy television series “The Big Bang Theory” was launched to the market. All the products developed on supporter’s proposal are under ‘’Lego Ideas’’ label and the members who originally designed the idea receive financial reword - 1% of the net revenue on the sales product. (Schlagwein & Bjørn-Andersen,2014).

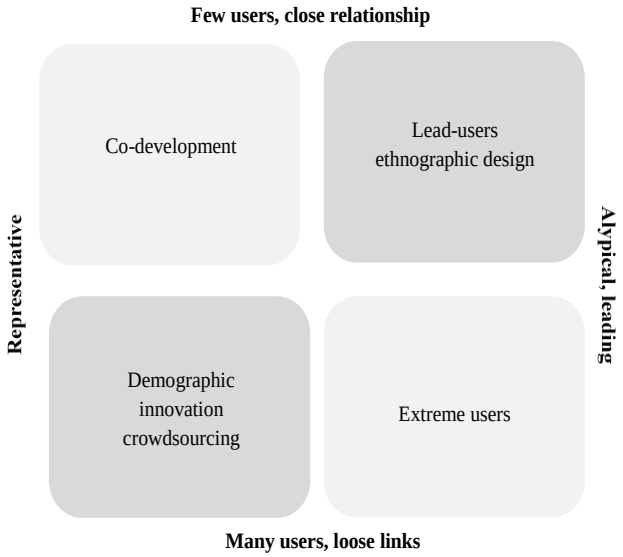
Like Lego, an American company named The Dial Corporation introduced Henkel Innovation Partnership Program, encouraging potential partners, either with completely new ideas or with solutions to already existing challenges in their corporation, to be a part of their

innovation network. In their web site they wrote that user, together with other stakeholders, plays a very important role in their R&D strategy, saying that universities, research institutes, suppliers and customers are very important external partners in developing their products.

2.2.1 Types of Innovation users

In the next sub chapter, we will look at the different types of user innovation. By classifying the users, we are able to compartmentalize their contributions to the innovation process and determine the type of user that is suitable to the development of the startup's innovation. In this sub chapter we briefly examine the three leading types of innovation users (crowdsourcing will not be discussed in our paper) within user involvement theory as shown in *Figure 3*.

Figure 3: Type of user innovation



Source: Tidd&Bessant, 2014

Lead users

The term 'lead users', was coined by Eric von Hippel (1986) over 30 years ago and since then this method helped many companies to make a remarkable innovation success. The idea behind this approach is - "if one works with innovative customers, then innovative product ideas are the result'' (Cooper and Edgett, 2008). From Von Hippel's point of view, lead

users are users who already have requirements that will become general in a marketplace in the future.

Furthermore, Von Hippel (1986) also proposed 4 steps in order to lead users market research conduction:

1. Identify an important trend by bringing solutions that will be required in the future.
2. Identification of lead users who were leading the trend in terms of need and experience.
3. Analyze need data from lead users
4. Project the need data from lead users into the desired market

Lead users are users whose demands for new requirements will become regular in the marketplace in the future (Urban & Von Hippel, 1986), but generally and by Von Hippel (1986) research, lead users adopt innovation earlier than regular users on average seven years.

Extreme users

> *''The users in the toughest environments may have needs which are at the edge- so any innovation solutions which meets those needs has possible application back into mainstream.'' (Tidd & Bessant.2018, p.213).*

This method of extreme users as innovator is based on strong believes that companies and generally market can learn a lot from consumers whose needs and requirements lie outside of mainstream customers. Very often, 'customer pains' that are discovered through extreme users are usually 'pains' of the majority. What makes an extreme user so valuable is the fact that they have an own experience as a proof. There are many examples how extreme users uncovered brilliant innovations and some of them we will mention bellow.

Alexander Graham Bell was a well-regarded teacher of speech, he had the desire to improve the lives of deaf people and to help them better integrate in the society. So, 1872 he invented the telephone which used light to transmit a sound. His primary idea was that deaf people use this device in a way they could “see” the sound of the words (The Washington post, 2017). His ingenious invention was driven by satisfaction of deaf pain points, but very soon many Americans owned telephones in their houses, and this stayed in history as a breakthrough innovation.

In a different way, but again a similar story is how the first e-mail protocol has been developed. A gentleman named Vint Cerf and his wife have had hearing disability and communication, and both was frustrated, and he believed that electronic letters could help. In the early 1970s, Vint Cerf came up with the TCP/IP protocol regulating how internet traffic goes which makes: world wide web, WIFI, 3G, 4G and e mails possible. Vint Cerf , known as ¨the designers of the architecture for the internet¨ is today's the vice president in Google and in many interviews points out that the technological design he made was reflected and shaped by his own hearing disability and the disabilities of people close to him (Solsman, 2017).

In order to solve the problem that airplanes had with braking and to keep them safe, the development of antilock braking systems (ABS) would be an additional example of extreme users. The ABS braking was developed to prevent turning and to retain the steering control during breaking. This innovation was adapted and today it is commonly used in the automobile industry (Von Hippel, 2005).

All of these examples are just among the countless cases showing how extreme circumstances that are not often into consideration can give a completely new perspective of innovations.

Co-development

Until recently, a firm-centered concept where users have a lesser role in the process of innovation was the more common approach, but very fast this traditional thinking was replaced by methods where innovation driven by networks of individual users (among the

other methods of user involvement) creates a unique value for both – the social value for users and commercial value for the companies. A co-development method presents one more additional concept stressing the increasing importance of customer-oriented mindset in order to better discover and fulfill the needs and value of the customer.

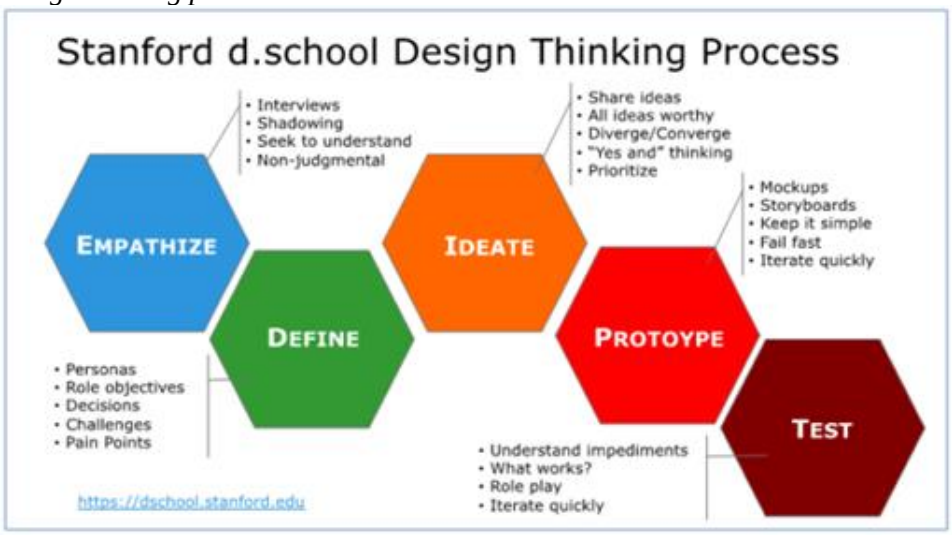
By allowing customers to be more active in the innovation process firms can increase their profitability and growth (Von Hippel, 2005), simultaneously enjoying the benefits associated with competition among the various competitors. This emerging co-development paradigm illustrates a vital role of users in developing a product. Many studies have shown the customer's capability of shaping a new product with a very little (or if any) help from firms (OHern & Rindfleisch, 2010). Increasingly, the form of co-development between firms and customers brings a new way of thinking in the promotion of value co-creation and the control firms have on the innovation process (Bessant, 2015).

2.3 Design thinking

The methodology of design thinking has been widely used as a tool to generate the process of innovation and recently gained a lot of attention. Design thinking is a human-centered based approach and very supported by multi-disciplinary teams. It has been more and more used in the information technology communities, management and especially in the business- where the approach ultimately fits in all types of business ideas – whether characterized as a product-based business or as a service-based business (Müller-Roterberg et al.2018, Van Reine, 2017; Bakic & Husgafvel, 2015). In many companies, this approach is applied in R&D departments as a part of their strategy to foster innovative thinking. Design thinking emphasizes a multidisciplinary pool of expertise from a very different field such as social science, design, engineering and business. ¨Blanding art, craft, science, business savvy¨ (Brown T, 2008), design thinking aims to develop a new user experience and to adjust a product to the new market trends, where developed solutions are always design considering customers' needs and market opportunities.

As a founder of IDEO – a global design and innovation company and as a founder of the d.school at Stanford University, David Kelley has been successfully used design thinking for nearly three decades. Using the methodology of design thinking as shown in *Figure 4*, he aims, as he indicated, to unlock creative confidence and creative potential in everyone - from students to business executives. (IDEO.com; Kelley & Kelley et al. 2013).

Figure 4: Design thinking process



Source: Stanford. school

Embracing design thinking in the process of innovation has given rise to enormous numbers of innovative product, system and services. Designing the first mouse for Apple, the first laptop, many different high-tech medical equipment, developing a 3.5 ton mechanical orca whale for the movie ¨Free Willy¨ and having a strong focus on encouraging ¨creative confidence¨ and collaborative help within the company, IDEO has been placed among the most influential product development companies in the world. Tim Brown (2008) the president and CEO of IDEO, describes design thinking as a very valuable competitive asset that uses the designer's sensibility and methods to meet customer's needs "with what is technologically feasible and what a viable business can convert into consumer value and market opportunity".

Bjogvinsson et al. (2012), argue that the process of design thinking should be seen as a collaborative effort between various participating stakeholders and their diversified competences included in the design process and where simultaneously ideas need to be ¨envisioned, ¨prototyped¨ and explored in a hands-on way, tried-out early in a way characterized by human-centeredness, empathy and optimism¨ (p.101). Approaching stakeholders and engaging them to become a part of designer's communities has been considered as a key task for designers and designer communities. Characterized by human centeredness, this concept encompasses the inclusion of the users as a stakeholder in the outcome as an elementary component of design thinking. Design thinking helps in creating solutions and stakeholders are an integral part of the process. "Those affected by a design should have a say in the design process'' (Binder et. al, 2012).

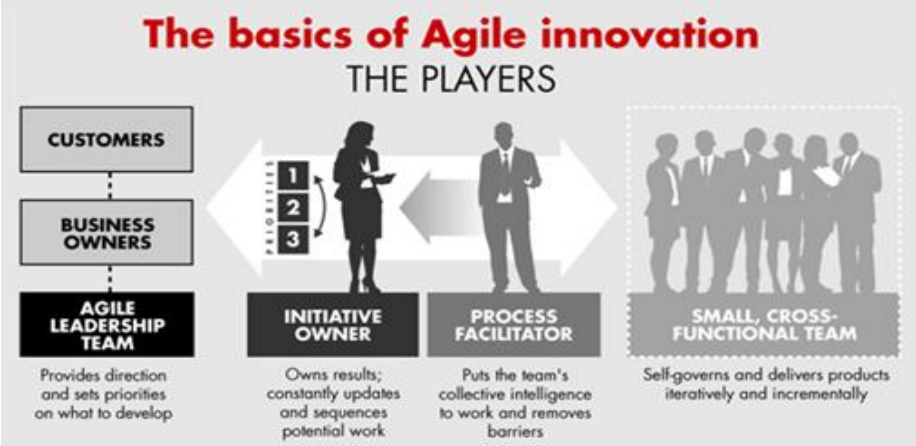
2.4 Agile Methods

The term agile software development was introduced in 2001, when the Agile Manifesto was declared, as a response and alternative to the inflexible traditional software development process, known as ¨waterfall model¨. The methodology of waterfall model was problematic due to long lead times and many decisions made in the beginning of a project could not be changed later. Agile is exactly what software engineers were frustrated about the SD traditional software development: ¨an interactive and incremental development, where requirements can be changed according to customer needs¨ (Sharma, Sarkar & Gupta, 2012).

The new era of global flows is here, and it is well known that companies today are facing unpredictable and rapidly shifting business environment due to the strong impact of globalization and digitalization progress. Software development is among major challenges form of innovation in nearly every element of business (Rigby, Berez, Caimi & Noble, 2016). In order to respond quickly to changing market requirements and customer perceptions and knowing how Information technology changes the way companies compete, agile innovation methods can be considered as a powerful tool for stakeholder engagement and better collaboration between them. The agile methodology, illustrated in Figure 5,

turning digitalization into a driving force as its important driver and tool for successful business and implementation of agile methodology is without doubt vital to innovative companies. All these facts are showing that there is a close connection between agility, innovative ability and the degree of digitization of companies (Eschberger, 2018).

Figure 5: Basics of Agile innovation



Source: Rigby, Berez, Caimi & Noble, 2016

There are many potential problems that innovation processes face and where agile methodology could bring solutions. Tidd (2006) pointed out that ¨One of the key problems in managing innovation is to make sense of a complex matter. Other researchers such as Hannola & Friman, (2013) in the article ¨Application of agile methods in the innovation process¨, analyzed the applicability of agile methods for improving the innovation process, analyzing software development processes as well as innovation processes. Considering innovation divided into three areas (Koen et al., 2002): FEI- a front end of innovation phase, NPD- new product development and commercialization activities, they agreed with Apilo et al. (2007) that some of the central of innovation problems involves: communication problems, fixed specifications, changing customer needs and expectations, knowledge transfer, bureaucracy and know-how between all the different stakeholders involved. In the following Tabell 1, it has been summarized what are solutions and tools that agile methodology possesses in solving innovation process problems.

Tabell 1: Agile methods methodology

Innovation process problem	*Agile methods solution*	*Agile methods tool*
Heavy documentation	Illustrating requirements as customer stories,	Info radiator,
		White board,
	Low-tech documentation	Planning game
Goal for fixed specifications to control FFE and NPD	Iterative and flexible process,	Big front end specifications are not required
	Short increments	
Change management becomes more difficult towards the end of the process	Priorisation of features with customers	Planning game,
		Backlog
	Iterations,	
	Collective ownership	
Transfer of know-how	Shared workplace	War room,
		Scrum,
		Pair programming,
Communication	Continuous communication by effective channels,	Interaction within individuals over tools,
		Daily meetings
	Continuous customer involvement	
Fuzziness of FFE	Several FFE loops during a project	Backlog,
		Unpredictability is expected

Source: Hannola, Friman, Niemimuukko, 2013

In the article "Agile software development methods: Review and analysis", Abrahamson et al. (2002) indicated when the software development method is an agile one and that would be in the cases when is: incremental (small software releases, with rapid cycles), cooperative (customer and developers working together with close communication), straightforward (easy to learn and modify), and adaptive (able to change at the last moment). The main premise in agile methods is that less planning is required, faster development time, the tasks are split into small increments and teams are working closely with customers (highest priority of customer satisfaction), creating a high value product in a cost-effective way. Many agree that AM brings benefits in terms of productivity, performance, faster time cycles, risk analysis and provides several improvements regarding to organizational practice that could be applied for improving the efficiency of the innovation process (Sharma, Sarkar & Gupta, 2012; Kettunnen 2009; Hannola & Friman 2013).

In the previous section, the innovation management literature has been discussed, but we would like to assume that we still feel some limitations, mostly considering the critical issues regarding to stakeholders' inclusion. An argument can be made that the methods as the ones discussed allow for inclusion but does not allow for the inclusion of non-economic

stakeholders thus, hindering the ability to test for ¨responsibility¨ of the solution to a wider society. In agile methods and design thinking and generally in the innovation literature, researchers have focused on economic stakeholders (where consumers and users involvement hold an outstanding place), as well as on value chain for business.

In order to assess the dimensions of the innovation in terms of social and ethical levels, RRI literature calls for a broader stakeholder inclusion with both economic and non-economic stakeholders (Maines da Silva, Bitencourt & Iakovleva, 2018; Blok, Hoffmans &Wubben, 2015)

Dealing with these concerns, the next section is seeking to extend discussion on RRI as an important part of our discussion.

2.5 Responsible Innovation

The idea of responsibility is originally thought at taking on risk and the avoidance of potential negative outcomes. Responsibility is as described by Rhodes (1996, p. 652) as “a new way process of governing; or a changed condition of ordered rule; or the new method by which society is governed”.

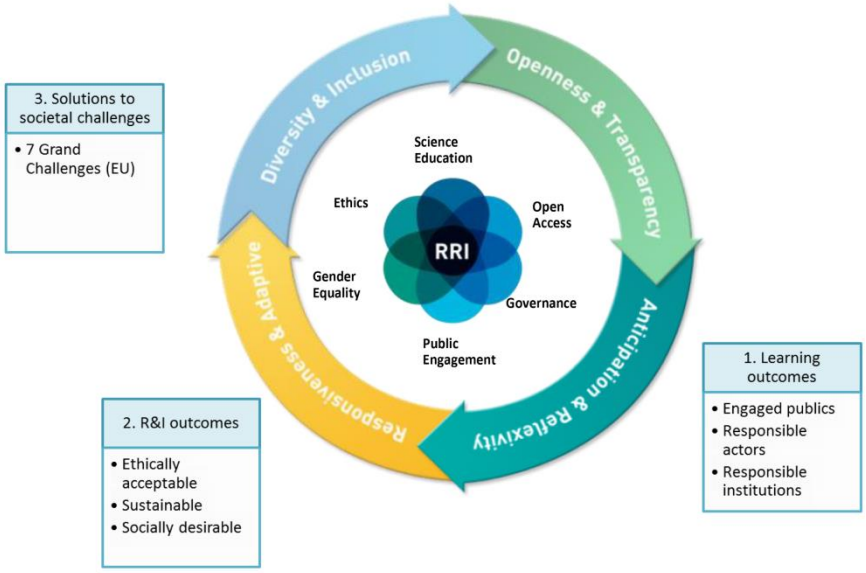
Science, technology and innovation face many challenges. In a globalized world and were scientific facts and assertions are often challenged depending on political and socio-economic circumstances, scientists face an increased sense of urgency to find methods that make science relatable and includes the wider society in the many challenges humanity is facing, by answering questions such as: What type of innovation we want? What's the purpose of this innovation? What kind of governance do we want? and How can we include the society as a whole? In essence, how do we find methods that can make the innovation and scientific development process more inclusive and responsible. The concept of Responsible Research and Innovation (RRI) can answer such questions and can be considered as a method that can greatly influence the current science and innovation governance.

Responsible Research Innovation (RRI) is a process in which societal actors and innovators are responsible in a clear and inclusive process for each other by considering the society ethical needs into the innovation process and policy making (Von Schomberg, 2011). Furthermore, RRI is a method capable of assessing and anticipating the potential impact and expectation from society that research and innovation can have, this with the aim to foster an inclusive and sustainable scientific research (European Commission, 2019). In this sense, RRI can be considered as an instrument capable to actively include the different actors in a society into the innovation process, therefore involving them in the challenge's humanity is facing. By developing a method that can manage the important relationship between science and society it can avoid difficulties and misunderstandings that the lack of social acceptability of a scientific project may bring, it can achieve this by understanding and including the different stakeholders involved in the project (Owen et al., 2012). Considered as a more inclusive method to governing science, RRI opens the role of research and innovation to all societal actors, therefore acquiring an important role in educating future generations (Burget, Bardone, Pedaste, 2016). Thus, RRI theory argues for including of broader stakeholder group, both economic and non-economic.

The concept isn't new, similar references can be traced back over a decade ago (see Hellstrom, 2003; Owen et al 2009; Von Schomberg, 2011), It's relevance started in 2011 when the European Commission decided to include it in their main tool for innovation funding Horizon 2020 (Owen et al, 2012). RRI has a wider focus since its aim is to implement a wider innovation policy (Stahl, 2013). Thus, RRI argues for better collaboration between R&D, innovation and society.

The European Commission has classified six elements within RRI as shown in *Figure 6*, public engagement, science ethics, science education, gender equality, open access and science governance. Additionally, these six elements within RRI have four dimensions in its framework: anticipation, inclusion, reflexivity and responsiveness (Stilgoe et al., 2013).

Figure 6: RRI diagram from the RRI Tools project



Source: Athena Institute, Free University of Amsterdam

Anticipation: Considers contingency and foresight. Discuss possible and desirable futures norms (Stilgoe et al., 2013).

Reflection: Relates to the awareness regarding the limits of knowledge and that the context of an issue is not an universally held line of thought. Furthermore, it analyses theories and value systems that form the basis for the norms regulating research and innovation (Stilgoe et al., 2013).

Inclusion: Public involvement, e.g. deliberative forums, focus groups, multi-stakeholder partnerships, involve social constituents' norms (Stilgoe et al., 2013).

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Responsiveness: Changes direction by responding to stakeholder's opinion and the values od the public. Additionally, it responds to the emergence of new perspectives and knowledge and norms (Stilgoe et al., 2013).

Therefore, RRI requires the involvement of different societal actors with different backgrounds and areas of interest or expertise all working together with the goal to find the solution to a problem. We can catalog research and innovation as responsible when policy agendas aimed at specific outcomes are met. The aim of RRI is to share the responsibility of our future with all stakeholders involved with the expectation that in this process we end up with a more sustainable R&I outcomes.

In the next two sub chapters we will explain the dimensions of RRI focusing for the purpose of this thesis on the inclusion dimension and to add to the knowledge we already have from Innovation management theory we will analyze the stakeholder's inclusion from the RRI perspective.

2.5.1 Inclusion

According to Stilgoe (2013), new forms to enhance public engagement need to be developed and move to a type of policy that considers this engagement. He also argued for this public engagement to include actors with different backgrounds and that can engage in a diverse and continuous dialogue with the aim to enhancing the discussion and our knowledge (Stilgoe et al., 2013, p.1572). As he eloquently wrote:

> *"The politics of science are subtle. There are questions about the science needs and the science we want; questions about uncertainty, evidence and burdens of proof; questions about ownership, access and control. We need to learn how to open up and debate these questions in public."* *- Stilgoe, 2013*

RRI argues for inclusion within the research process both for social and ethical reasons. The RRI inclusive dimension focuses mainly on citizen participation and societal aiming to redefine the conventional top-down framework that prevails and instead advocates for an inclusive one with a horizontal structure. Specifically, the inclusion dimension calls for scholars in the fields of development, recoupling, social justice and science & innovation to

change the way science policy is carried out to unify the somewhat fragmented discourse that as a scientific community persists (Smith, Fressoli &Thomas, 2014; Stirling B, 2016).

The concept of inclusion of different actors in a set of processes remains vague and because of this it's important to highlight and put a focus on equity and influence as part of what inclusive innovation and RRI are. Since the relationship between science and society is often marked by unequal power relations, the more powerful actors with conflict of interest are often heading t the decision-making. A mechanism that calls for the people's right to employ and articulate their decision is then an optimal goal in any inclusion-based method (Dryzek, 2009). In the next chapter we will explain who are the stakeholders that can participate in the inclusion dimension.

2.5.2 Stakeholders in RRI

Stakeholder inclusion, the most discussed dimension of RRI, has gained a sustained interest for many project leaders and management professionals. Its main predicament is that in order to guarantee a successful development of a project, all relevant stakeholders must be approached to include their interest and opinions.

The concept of RRI relies on the inclusion of stakeholders. Many researchers have relied in defining the inclusion of stakeholders as “participation of interest groups such as community representatives, businesses. government authorities, politicians, organizations and civil society that engage in a planning or decision-making” (Hauck et al, 2016). Inclusion has been considered as the most discussed dimension for fostering RRI, where inclusion refers to “visions, purposes, questions and dilemmas to broaden the collective deliberation though processes of dialogue, engagement and debate, inviting and listening to broader perspectives of audiences and diverse stakeholders. (Owen et al. 2013)

There are two main ways to classify stakeholders: internal and external, while they further can be classified as economic and non-economic. Furthermore, while innovation

management theory focuses more the user and customer involvement side, RRI literature goes for a wider goal by arguing for the inclusion of economic and non-economic stakeholders (Maines da Silva, Bitencourt & Iakovleva, 2018).

Findings by many researchers indicate the need for better understating the important role of stakeholder's inclusion in the innovation process. Rodriguez-Melo and Mansouri (2011) described the stakeholder's inclusion as a decisive factor that helps to increase managers awareness, thus making the law to be implemented and in consequence making sustainability appealing to potential clients. RRI emphasizes multi-stakeholder's participation to help disseminate knowledge, resources, expertise and knowledge but concerns regarding who to involve, which stage of the innovation process this should be done and whether the stakeholder chosen is representative (Maines da Silva, Bitencourt & Iakovleva,2018), still remains as a subject to a deeper analysis. Furthermore, and according to their findings, one of the main challenges is that stakeholder mostly participate in the final stage of innovation - post lunch phase, what leads to unnecessary reworks and cost overruns. Neglecting to engage key stakeholders from the early stage of the innovation process causes limited reflection on stakeholder inputs and constrictive discussions, considerably increasing the chances of innovations fail.

Nevertheless, there is a need for the stakeholder's inclusion in the innovation process as early as possible, as an effective way to identify stakeholders and to determine and meet needs of those stakeholders. Therefore, the most critical and important part within stakeholder theory in RRI is the identification and inclusion of the stakeholders that can have an important contribution to the innovation development. It is believed that the frameworks examined in this section provide a tool that can be used to properly identify and include all relevant actors in a collaborative and inclusive way.

This chapter focused on the method of RRI and the inclusion of non-economic stakeholders in the innovation process. In order to manage effectively the stakeholder's inclusion, innovative startups need to ensure routines and capabilities. In this sense, the next chapter

will focus on dynamic capabilities and how by implementing dynamic processes firms to adapt can to new insights from stakeholders.

2.6 Dynamic Capabilities

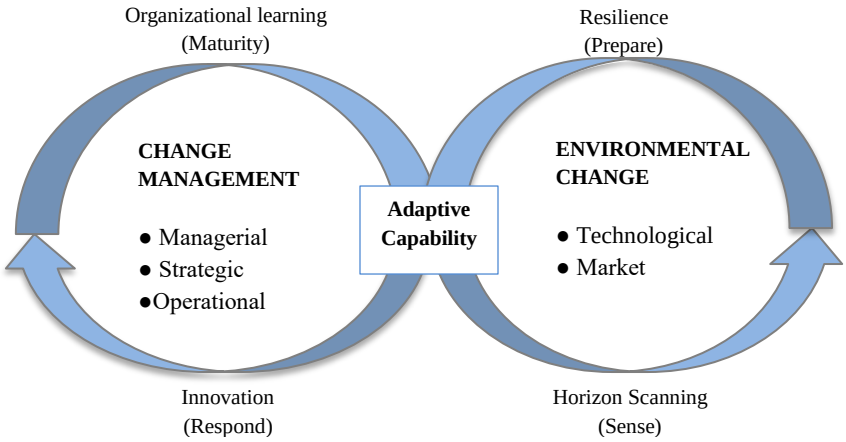
Dynamic capabilities are considered to be an emerging and potentially integrative concept helping companies to achieve sustainable competitive advantages in increasingly demanding business environments. The term “dynamic” underline that the firms innovative capacity are highly needed in situations when market timing is critical, when they are challenged by rapid rate of technological and digital changes and when is difficult to forecast future performance of competitors and future market requirements (Teece, Pisano & Shuen, 1997). The term capability stresses an important role of strategic management in performing the tasks or activities related to internal and external organizational needs in order to accomplish core functions and properly correspond to requirements of a changing environment (Teece, Pisano & Shuen,1997).

According to Wang and Ahmed (2007), they refer to the organizations behaviour that is aimed at integrating constantly and to reconfigure resources and capabilities. Most importantly, to develop its core capabilities in order to obtain and sustain a competitive advantage. They argue that dynamic capability emphasizes the process of transforming firm resources and organizational capabilities into product and additionally providing added value to customers, pointing out that this transformation process is based on ¨a swift, precise and creative manner¨ in the line with the rapidly changing market conditions (Wang and Ahmed, 2007). Based on their empirical findings, they pointed out three principal components to dynamic capabilities: adaptive capability, absorptive capability and innovative capability. These tree complementary factors have huge impact on the performance outcome, and they are important contributors for gaining a competitive advantage over competitors.

Adaptive capability

Adaptive capability can be seen as ¨the organization's strategic ability to maintain competitive advantage by modifying, reconfiguring or interconnecting resources, capabilities and competences, and seeking to increase the number of options or available strategic reactions in order to adapt quickly environmental changes and generally opportunities¨ (Kaehler, Busatto, Becker, Hansen & Santos, 2014).

Figure 7: Adaptive capability



Source: Hamel, 2007.

As *Figure* 8 illustrates, adaptive capability emphasizes the capacity to adjust on emerging market opportunity where there is difference between adaptive capability and adaptation. Wang and Ahmed (2007) describe adaptation as ¨an optimal end state of survival for a firm¨, while adaptive capability keeps focus on exploration and exploitation in organizational learning strategies. Adaptive capability goes often together with new forms of the organization, where there are many examples how companies managed to adapt themselves to changes in market trends followed by strategic flexibility of allocating resources accordingly. The ability to adapt to rapid changes and to be able to line up internal resources and internal efficiency with market demands has been shown as essential part for company's growth and to keep ahead of the competition.

Possessing high levels of adaptive capabilities would actually lead to high level of dynamic capability (Wang & Ahmed, 2007). Companies may have very different degrees of adaptive

capability and measuring adaptive capability would include different dimensions. Some of key factors of adaptability would be market orientation (Grinstain, 2008), effective and speedy decisions under changing environmental conditions, market monitoring and understanding of customer needs.

Absorptive capability

Absorptive capacity is the organization's identification, assimilation and exploitation of knowledge (Cohen and Levinthal, 1989). Absorptive capability has emerged as a concept essential to a firm's absorption of external knowledge. Same as with adaptive capability, different firms have different degrees of absorptive capability, but it has been shown that firms with higher absorptive capability are influenced by stronger ability to recognize that partnerships might be a source for new organizational learning, and generally higher ability to use external information and change it to being "firm-embedded knowledge" (Wang & Ahmed, 2007).

Based on the literature, Wang and Ahmed (2007) find out that more efficacious adopters compering to less efficacious adopters:

1. Facing uncertainty demonstrate commitment to long term use of resources.
2. Develop first had knowledge by learning from different partners and research experience.
3. Thoroughly analyses the new drilling technology and share information within multidisciplinary teams.
4. Develop and utilize different complementary technologies.
5. Possess high levels of knowledge and skills in areas that can be applied to the new technology.

Innovative capability

Innovative capability or organizational innovativeness is the organization's ability to develop new product and markets, based on innovative orientation, this can include innovative processes and behavior. Innovative capability is highly needed in attaining competitive advantage and based on many different literature review (Wang & Ahmed, 2007), it is possible to identify five dimensions of an organizational innovativeness: product innovativeness, market innovativeness, behavioral innovativeness, process innovativeness, and strategic innovativeness. These multi-dimensions are component factors of dynamic capabilities and are important in the measurement of the innovative capability of a firm. Bell (2009) stresses that innovation capabilities are those that are needed in the development and implementation new product and process technology and to carry out improvements to those already in use.

Obviously, adaptive capability together with absorptive and innovative capability are the most crucial components of dynamic capability showing how important is to reconfigure a firm's resources and capability in order to adapt to external changes. These concepts are different, but again all of them are much correlated components of dynamic capability. Moreover, adaptive capability underlines ability to identify market opportunities, absorptive capability emphasizes ability to absorb external knowledge and innovative capability brings ability to create knowledge and all of these three components are common across many different industries (Kaehler, et al., 2014; Wang & Ahmed, 2007).

Finally, dynamic capabilities are a useful tool that can help to understand and shape different opportunities that arise by enhancing a startups asset (Teece, 2007). In a competitive market a firm's ability to be dynamic by absorbing knowledge and adapting to changing environments provides a competitive advantage that can make the difference in innovative startups.

2.7 Summary of the literature

We have now discussed different innovation management theories regarding user involvement with an emphasis on stakeholder inclusion. The correlation between the success of startups and the inclusion of stakeholders in their innovation process its emphasized. Innovation management has a long tradition of highlighting the importance of user's perspective, thus current theory focusing on the different methods that can assist in identifying and include relevant stakeholders into the innovation process can be used for innovative startups in their development process.

Major questions such as when to include, whom to include and at what stage such stakeholders should be included are partly addressed in these methods, thus served as the basis for the researchers of this study to create the interview guide and the further development of the survey performed. In chapter number three will focus on the methodology used to carry out this study.

3. Methodology

In this section, the research strategy and its process will be described. Also, the framework regarding this type of study and a practical description of the data collection will be presented. There is also an interest to provide a critical evaluation of the approach adopted to conduct the study.

3.1 Research strategy

There are two main research approaches used by scholars: qualitative and quantitative research. For the purpose of this study both qualitative and quantitative research were used to substantiate and to further validate the study. The use of mixed methods focuses on the collection, analysis, and the mix of both qualitative and quantitative data in one study or a series of studies. The use of this method provides a diversified source of information thus leading to a more diversified understanding. When both methods are combined, the qualitative part can provide a wider understanding of the numerical findings in the quantitative part (Gunnell, 2016). This allows to make the argument that using qualitative and quantitative approaches in combination provide a better understanding of research problems than using both approaches alone (Creswell and Clark, 2007, p. 5). The qualitative part can describe a social phenomenon by trying to understand human experience and behavior (Lincoln & Guba, 1985; Yin, 2003). The quantitative part can be used as a confirmatory section of the study and can be used for generalization of the findings in the qualitative part (Lobe, 2008).

Qualitative research is used to better comprehend the motivation behind the answers of the person interviewed. Additionally, it allows to understand the research in question in its natural setting (Yin, 2003) by allowing to find trends or correlations in opinions thus allowing for a deeper analysis (Gunell, 2016). This type of research method can also provide the study an in-depth elaboration of the case in question (Patton, 1990). By using an inductive approach, the researcher analyzes a topic and generates theory propositions

obtained from the data gathered (May, 2011). The qualitative method uses constructivism as foundation in which reality is understood as a social product of social interactions (Flick, 2007). The use of this approach allowed the researchers to describe and make sense of the answers provided by those interviewed, it also allowed them to speak broadly about the research issue therefore providing a wider perspective on their line of thought.

Quantitative research methods are those in which numbers are used to explain findings (Kowalczyk, 2016). Also, the quantitative research examines more systematic the quantitative findings and their correlations. Its impersonal meaning that words, opinions and points of views from participants are not collected, therefore it's a research driven method (Creswell, 2013) that focuses on quantities and measurable factors by using the process of deduction when examining the relationship between theory and the data analyzed (Bryman, 2012). Its founded in objectivism and positivism therefore its main predicaments are that the opinions, experience or interpretations of the social actors involved do not influence social realities (Saunders et al., 2016). Cormack describes it as: "A formal, objective systematic process in which numerical data are utilized to obtain information about the world." (Cormack 1991). There are three main types of quantitative research: descriptive, quasi experimental and experimental (Baker, 2017). For the purpose of this thesis the descriptive quantitative method was used which relies in gathering additional information in a chosen field. This method was used to validate the findings from the qualitative research.

Considering that mixed methods is that the use of this approach provides a better understanding of research problems than the use of them separately and that their use can improve the validity of the research (Hurmerinta-Peltomakl & Nummeia, 2006). In this sense, the objective of this thesis is to analyze the stages in which innovative companies reach out to stakeholders, the researchers consider the use of the mixed methods approach suitable with the aim to provide a more complete understanding and further validate the findings presented in the study.

Hence, the following subsections will focus on the research approach, data collection, interviews with startup companies, survey, data analysis, familiarization, thematic framework, indexing, charting, mapping & interpretation, quality of analysis, validity and a brief summary.

3.2 Research design

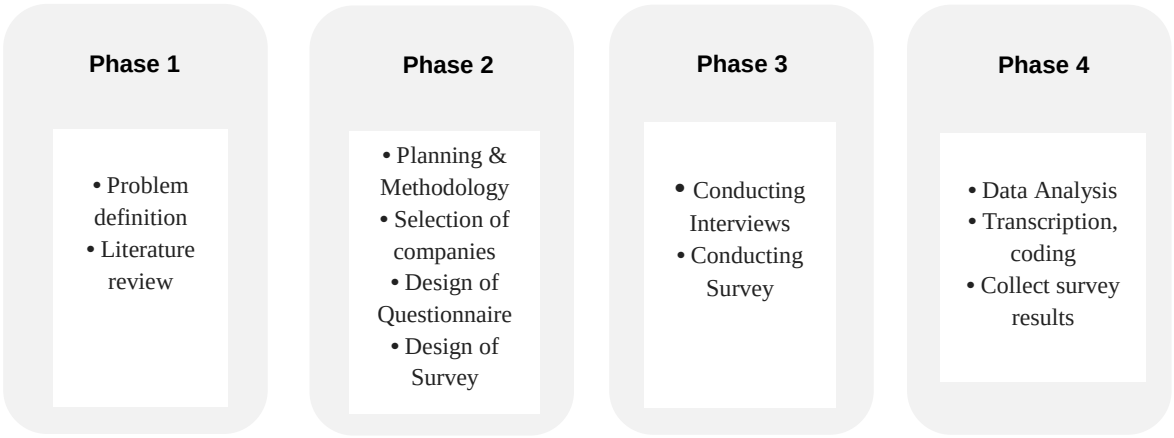
The research design is the overall strategy chosen to integrate in one framework the components of a study in a manner that it's both logical and coherent. This ensures the research question is addressed in an effective manner and provides the guideline for collecting, measuring and the analysis of data (De Vaus, 2001).

The research design that was used in this thesis is a sequential exploratory design in which qualitative data collection and analysis is followed by quantitative data collection and analysis. The priority lies in the qualitative part of the study and the findings are later on integrated in the analysis part of the study.

The researchers aimed to provide further understanding on the relationship between the context, innovative startups; and stakeholders, with the intent to add further knowledge regarding innovation management in regards to stakeholder inclusion, the researchers in addition expect the findings to provide innovative startups information that can be used to obtain a competitive advantage.

In *Figure 8* on the next page, an overview of the research design is presented.

Figure 8: Phases of the research design.



Adapted from Case Study Method (Yin, 2014)

Hence a qualitative and quantitative study using a mixed method methodology was performed; an organization in the Oslo region named Oslo International Hub was approached to conduct this research on its members.

3.2.1 Case description

The following sub chapter addresses the context of this study in which a brief description of the innovation taking place in the city Oslo is presented.

3.2.2 Context of the study

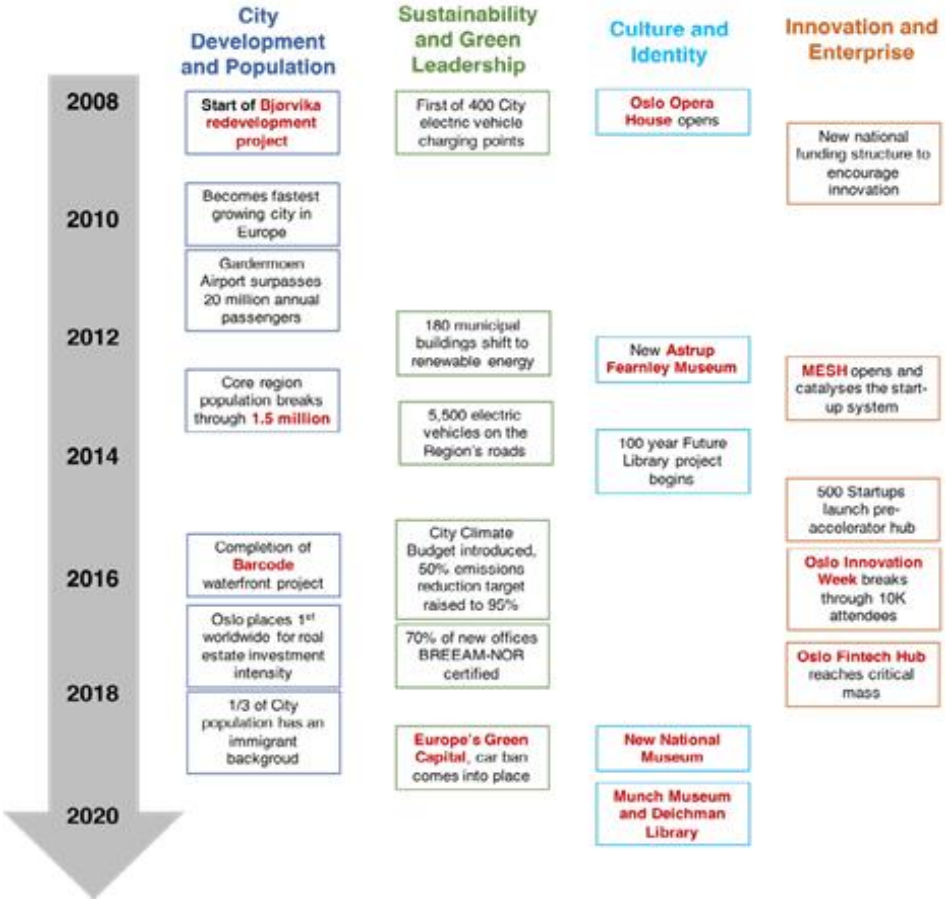
Developing an innovation driven economy is a challenge the city of Oslo is facing. Over 15000 startups are created every year in the city of Oslo (Oslo Business Region, 2018), therefore showcasing the rising innovative ecosystem that is developing in the city. It's been 5 years since the city council decided to increase the Oslo brand and its international placement by diversifying the local economy with a focus on startups and economic innovation. The recently published State of Oslo report highlights the following accomplishments: 1. Impressive growth in its Innovation ecosystem. 2. Pioneering in green

solutions and sustainable development. 3. New Landmarks that showcase the city as a culture hub (Oslo state of the city, 2018).

The city region has been a long time associated with oil and gas investment but for some time now is consistently been looked as a green tech hub within Europe. This is changing due to investments in urban development, art districts and cultural hubs are helping the city's image. In terms of business friendliness when compared to similar cities growth in the last 12 months shows that investment in the Oslo region remains high (Oslo state of the city, 2018). This is due in part by the creation and expansion of an innovation infrastructure that reflects the increase in incubators, employment, venture capitalist funding and entrepreneurship. Thus, Oslo shows up on a consistent basis in the rankings of innovation cities in Europe.

Figure 9 shows the city's 2008-2020 development plans in which an emphasis in city development, population, sustainability, culture and innovation are the focus. In the column number 4 we can observe in 2008 the creation of a national structure that promotes innovation. By 2012 and forward the creation of incubators, startups events and co working spaces can be seen.

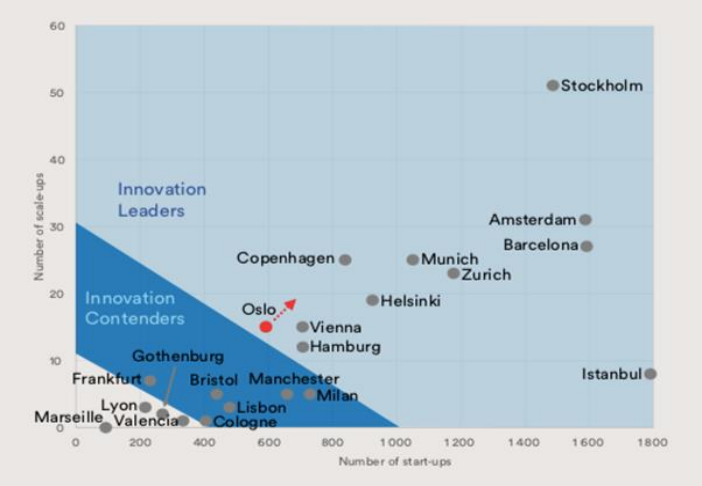
Figure 9: Oslo region 2008-2020 Innovation development plan



Source: Oslo State of the City 2018

As *Figure 10* shows, Oslo is now in the innovation leader's metrics alongside Vienna and Hamburg and still trailing Copenhagen and Helsinki within Europe. As expected, Stockholm, Amsterdam and Barcelona lead the way and are still a considerable far goal to reach but the city is now past the innovation contender conversation above cities like Manchester and Gothenburg. Considering the relatively short time the region has decided to implement their strategy the results are considerable. In terms of innovative firms, the city has seen an increase of 17% in respect to the previous year. That represents a significant increase in this field.

Figure 10: Innovation leaders in Europe



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Source: Oslo State of the City 2018

Considering the technological and innovation related developments been carried out in the region and the increase in the innovation rakings in recent years in addition to the prosperous and relatively young entrepreneurial ecosystem been developed the researchers consider the Oslo region of interest to conduct the current study.

3.3 Primary research samples

The following sub chapters will focus on the primary research samples used for this study. A detailed explanation of the design, composition and structure of the interviews and the survey will be presented.

3.3.1 Sample: Interview cases

The units used for this analysis are innovative startups located in the Oslo region. The study includes different startups analyzed by the researchers aiming to determine the level in which stakeholders are included in their innovation process. There were 10 companies selected for the qualitative interviews part of the study, a summary of them can be found in *Table 2*.

Table 2: Interview company profiles

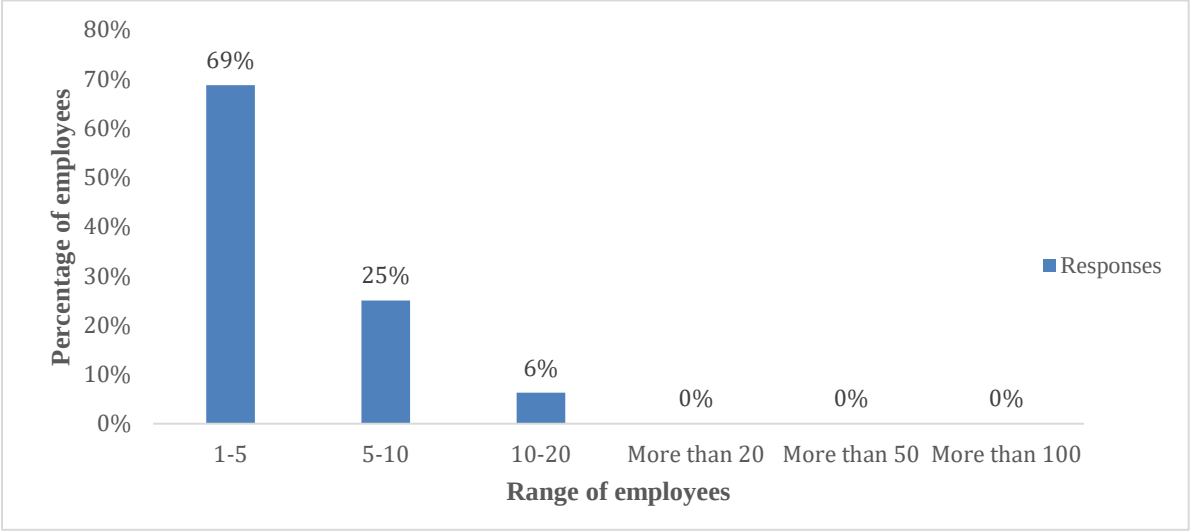
Company	Business	Market/Segment	Size
A	Shared electric car service that integrates mobility in new housing communities	B2C: Residents in housing communities is primary B2C segment. Secondary is the commuters. B2B: Property Developers both as a customer and a sales channel to B2C segment.	Small
B	Gamified investment platform, letting people invest in individual solar panels in large scale solar farms	The solar energy market is growing more then 30-50%every year in a multi BN dollar industry.	Small
C	Enable broadcaster/clients to make money, engage and connect with viewers all inside the streaming video. Product placement that gives the control to the viewer. By utilizing the power of the pause button	People aged 18-34	Small
D	Digital assistant that delivers a mobile business intelligence and commerce solution.	First solution for the professional hair- and beauty industry in the Nordics.	Small
E	Solution that targets on the factors that cause diabetes	People with diabetic conditions	Small
F	Smart energy saving solar panels	Business in general	Small
G	Project planning software for big occasions, to save consumers save time, money	People planning their own events.	Small
H	Scooter sharing platform	Trillion-dollar market	Small
I	Workshop/training technology that uses AI for in house training	Businesses/Institutions that require technology training	Small
J	Fintech app that uses AI for financial planning	Business/fintech/b2b	Small

Note: Companies with 1-20 employees are defined as small, companies with 21-100 employees are defined as medium, and companies with over 100 employees are considered large.

3.3.2 Sample: Survey

Secondly, a quantitative survey was carried out to further validate the findings from the interviews in which a total of 17 startups participated. The characteristics regarding number of employees, area of business & sector of the startups that participated in the survey and their profiles are described below. In Figure 11 we can see an overview of the number of employees the startups from the survey is presented, shows the startups participating are small companies in terms of number of employees.

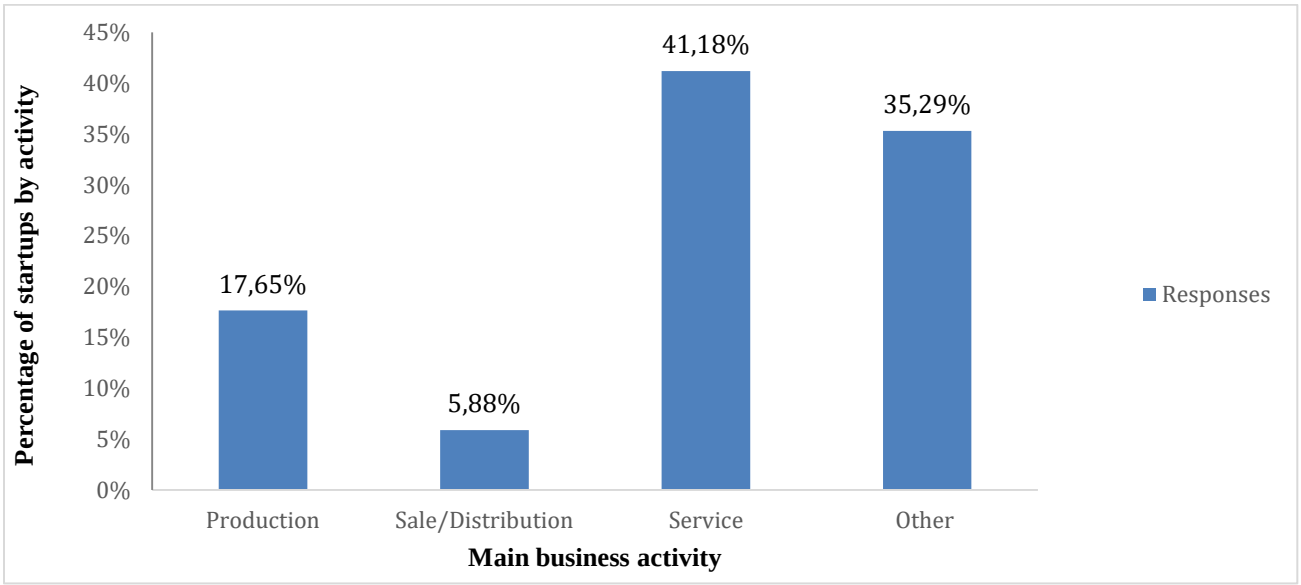
Figure 11: Number of employees in survey respondents



Source: Author's elaboration; data collected from the research (2019)

Furthermore, Figure 12 shows the business activity of the startups, the majority with 41.18% are in the service industry. In second place 35.29% of respondents chose ¨Other¨ as their choice, in this open-ended option two startups answered R&D, one answered Saas and another one product and services digitalization.

Figure 12: Business activity survey respondents



Source: Author's elaboration; data collected from the research (2019)

The following *Table 3* shows the profiles of the industries from the startups that answered the survey. Additionally, it shows the dates that the responses were registered in the online survey.

Table 3: Profile of companies in the survey

No	Responses	Date of response
1	Oil service	29/05/2019
2	Strategy consultancy	29/05/2019
3	Health, telehealth, therapy, education	15/05/2019
4	Health/Pharmacy	13/052019
5	Medical device	13/05/2019
6	Technology	13/05/2019
7	Personal shopper for businesses	09/05/2019
8	Agtech	08/05/2019
9	Information Technology	08/05/2019
10	IT	07/05/2019
11	Tourism	06/05/2019
12	Mobility	06/05/2019
13	Health	06/05/2019
14	Health	06/05/2019
15	Education	06/05/2019
16	Information Technology	03/05/2019
17	Tech	03/05/2019

Source: Author's elaboration; data collected from the research (2019)

3.3 Primary data collection

As described before, for this study a mix methods research approach was performed in which qualitative and quantitative methods were used to get a wider and more complete understanding of the study. The researchers expect that the use of both methods will provide the findings a better context and further substantiate the research question.

John Creswell (2013), points out the different reasons that can support the use of mixed methods, for the purpose of this study we can include: 1. The need for different, multiple perspectives. 2. The need to confirm qualitative experience with quantitative measures. 3. The need to better contextualize instruments, measures or interventions. 4. The need to gather trend data and individual perspectives. Other applications of this research approach are

people who want to explore opinions and beliefs of a population/group of people before developing and/or administering a new assessment tool. Researchers can use mixed methods as well to enhance the study by talking to different people and confirming similarities in both data collections. It can be used as well as a method to understand opinions, points of views or beliefs from the subject of the study as an exploratory measure before implementing a new method (Rucker, 2018).

For this study the organization Oslo International Hub was approached. The organization works as an international accelerator and co working space in the city of Oslo. The main instrument used for the selection of the interviews was their Nordic Angel Program which is a Horizon 2020 international training and investing program for startups and angel investors. The process used to collect relevant information for the purpose of this analysis, consist of primary data in the form of 10 interviews to management of startups in the Oslo region. This was performed by the present authors and the information and data collected was used as an integral part tours determining the outcome in the innovation process analysis. A secondary source of primary data collection was done in the form of a survey performed to further validate the findings from the interviews. For this purpose, startups where contacted and via email, a document was sent containing relevant questions. It is important to mention that this document was sent on April 30th of 2019 from the offices of Oslo International Hub located at Oscars Gate 27 in Oslo, Norway. The initial selection of candidates for both the interviews and the survey was the following: 1. Startups no older than 5 years. 2. Members of Oslo International Hub. 3. Participated in the Nordic Angel Program. 4. Diverse industries if possible.

3.3.1 Interviews with startup companies

Prior to data collection, an interview-guide was constructed (Appendix 1) guided by theories described earlier. The major purpose of the interviews was to get more understanding of what drives stakeholder inclusion, who are stakeholders, at what stage they are included and how knowledge is utilized by firms. It gave us an opportunity to increase the validity of the

questionnaire for our survey. The main instrument used for the selection of the interviews was Oslo International Hub's Nordic Angel Program. The program as of summer 2019 is in its third batch and the top 10 finalists from these past three editions (30 in total) were pre-selected to ask if they will like to participate in the interviews. Initially several companies were contacted by email and phone asking if they were willing to participate, an email detailing the study and its objectives was sent. Finally, 10 companies agreed to participate. All the interviews were done with the CEO of the startups, this was expected since most of these companies are small and in early stage. Interviews were performed in the period from April 22nd until May 4th and each interview lasted for about 20 minutes and were recorded. This was performed by the present authors and the information and data collected was under the principle of confidentiality. The informants' profiles are shown in Table 4.

Table 4: Informants profile

Informant company	Position	Gender	Native Language	Meeting
A	CEO	Male	Norwegian	Phone
B	CEO	Male	Norwegian	Phone
C	CEO	Male	Norwegian	Phone
D	CEO	Female	Norwegian	Phone
E	CEO	Female	Norwegian	Phone
F	CEO	Male	Norwegian	Phone
G	CEO	Female	Norwegian	Face to face
H	CEO	Male	Norwegian	Face to face
I	CEO	Male	Norwegian	Face to Face
J	CEO	Male	English	Face to face

Note: The abbreviation: CEO refers to the founder of the company.

3.3.2 Instrument Interview guide

The interview guide was designed as an additional help for the researchers to assure that the questions asked were consistent with the topic of the thesis. The interview questions cover the opinions and points of view of the company as well as of the industry in general. By using these questions, the researchers wanted to put an emphasis in the company's innovation line of action and thinking, their openness to stakeholder's inclusion and their capacity to adapt. *Table 5* highlights the aspects of each questions asked.

Table 5: Interview questionnaire guide

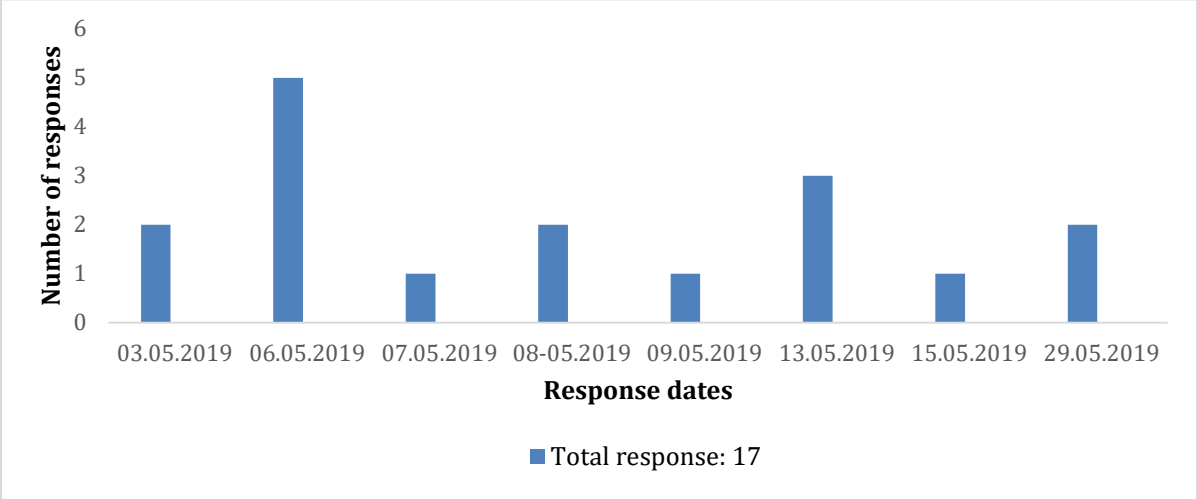
No	Questions	Matter
1	Can you tell us about the product or service you offer in your department, company or organization?	Introductory
2	Years in business, employee numbers. How was it formed?	Introductory
3	How long is the product development process?	Introductory
4	What stage is it in?	Introductory
5	Who had the idea?	Introductory
6	About your product/service, what do you consider as important for the user?	Introductory
7	Who contributed on the early stages?	**Stages of new product development** Ref Tidd, J., & Bessant, J. (2014). Strategic innovation mg. Chichester: Wiley. Tidd et al 2001
8	What are your criteria for inclusion?	Stakeholder Inclusion
9	Do you count with user's participation during the product/service development process? How important is users' contribution?	Stakeholder Inclusion
10	Whom do you consider as your external stakeholders, can you describe them?	Stakeholder Inclusion
11	Is multi-stakeholder participation a practice / policy of the company or is this the first project that contemplates this participation?	Stakeholder Inclusion
12	Were the same stakeholders used at all stages of the product development process?	Stakeholder Inclusion
13	What method was used for these participations (interview, focus group, questionnaire, workshops)?	**Stages of new product development** Ref Tidd, J., & Bessant, J. (2014). Strategic innovation mg. Chichester: Wiley. Tidd et al 2001
14	Was the same method used at all stages of the product development process?	**Stages of new product development** Ref Tidd, J., & Bessant, J. (2014). Strategic innovation mg. Chichester: Wiley. Tidd et al 2001
15	Has the idea changed in relation to the initial plan based on stakeholder input? (Describe)	**Reflexivity/absorption of knowledge** Based on Zahra & Gerard (2002), Wang & Ahmed (2007) mentioned the 'multidimensional construct of adsorptive capabilities', which consists of 'knowledge acquisition, assimilation, transformation and exploitation'
16	Do you consider important the participation of external stakeholders at what stage? Why?	Stakeholder Inclusion
17	Did you developed new processes or routines to manage stakeholder participation?	**Adaptive capability (responsiveness):** Based on Zahra & Gerard (2002), Wang & Ahmed (2007) mentioned the 'multidimensional construct of adsorptive capabilities', which consists of 'knowledge acquisition, assimilation, transformation and exploitation'
18	Who, from your company, is in charge to select, invite to participate and manage the information developed toughs the stakeholder participation?	Stakeholder Inclusion

Source: Author's elaboration; data collected from the research (2019)

3.3.3 Survey

Secondly, a survey was performed to further validate the results of the interview was carried out between April 30th and May 29th of 2019. The first response was recorded on May 5th and the last one 29th May. The criteria originally described was followed excluding the 30 companies that had been finalist in the previous 3 batches of the Nordic Angel program and that were contacted for interview purposes. An email containing a link which gave access to a document with the relevant questions was sent. The survey (shown in appendix 2) was sent on April 30th of 2019 from the offices of Oslo International Hub. Figure 13 offers an overview of the responses date, rate and total number of respondents from the survey.

Figure 13: Overview of survey response date, rate, total responses and time taken



Source: Author's elaboration; data collected from the research (2019)

For the survey a total population of 151 startups was emailed with 22 emails returning either error messages, full inbox or automatic replies with lack of availability. Effective sample of 129 startups were validly contacted with 17 responses. Response rate: 13.18% and average time spent filling out the survey was 9 minutes 48 seconds.

3.3.4 Instrument survey questionnaire

A questionnaire was constructed and verified by the researchers and their supervisor. The following *Table 6* highlights the aspects of each questions asked.

Table 6: Survey questionnaire

No	Questions	Matter
1	What year was your business founded?	Introductory
2	How many employees does the business have?	Introductory
3	How many employees does the business have?	Introductory
4	What industry/sector does you company belong to?	Introductory
5	What is the main business activity? (Please choose only one answer)	Introductory
6	About innovativeness in your company:	Innovation Management
7	The development of new products and services considers common stages composed of a group of activities. Idea phase refers to a very early concept without major resources committed. Detail design stage refers to development of the first prototype. Testing refers to improvement and testing of the solution. Launch stage is the first market entry with sales. Post launch stage is active presence on market, this can be up to 5 years after launch stage. What stage of development applies to your new product/service?	**Stages of new product development** Ref Tidd, J., & Bessant, J. (2014). Strategic innovation mg. Chichester: Wiley. Tidd et al 2001
8	Stakeholder inclusion is a tool that provides start-ups the ability to bring large groups of people together including city employees, non-profits, civil society organizations, legislators, community leaders and end users into the innovation process of developing their product/service. How important were stakeholder's involvement for the innovation process? (please check all that apply)	Stakeholder Inclusion
9	How important were stakeholder's involvement for IDEA stage of the innovation process? (early concept without major resources committed) Please check all that apply	Stakeholder Inclusion
10	How important were stakeholder's involvement for DETAIL DESIGN stage of the innovation process? (development of the first prototype) Please check all that apply	Stakeholder Inclusion
11	How important were stakeholder's involvement for TESTING stage of the innovation process? (improvement of the first prototype and active testing of the solution). Please check all that apply	Stakeholder Inclusion
12	How important were stakeholder's involvement for LAUNCH stage of the innovation process? (the first market entry with sales). Please check all that apply	Stakeholder Inclusion
13	How important were stakeholder's involvement for POST- LAUNCH stage of the innovation process? (active presence on market, can be up to 5 years after launch stage) Please check all that apply	Stakeholder Inclusion
14	We used the following tools for involving external stakeholders in innovation process:	Stakeholder Inclusion
15	How do you select the stakeholders?	Stakeholder Inclusion
16	Who, from your company, is in charge to select, invite to participate and manage the information developed troughs the stakeholder participation?	Stakeholder Inclusion
17	**Please, check all that apply** -We often get new ideas after interaction with users/ stakeholders - It is a good established routine to discuss user/ stakeholder feedbacks and possible improvements of the solution . We ensure that all employees are aware of the feedback from users/customers/partners and other stakeholders . We have routines (repeated procedures) to get stakeholders opinion and to involve them into the innovation process (surveys, digital feedback, face-to face feedback, other means)	**Reflexivity/absorption of knowledge** Based on Zahra & Gerard (2002), Wang & Ahmed (2007) mentioned the 'multidimensional construct of adsorptive capabilities', which consists of 'knowledge acquisition, assimilation, transformation and exploitation'
18	**Please, check all that apply** -We have considerably improved our competences during the innovation process -We managed to provide speedy response to market change -We engaged with new partners and distributors during the innovation process -Our organizational structure (number of employees, their competence, member of advisory board) have changed during the innovation process -Our solution was considerably modified during the launch and post-launch phase -Our solution was considerably modified during the test phase -Our solution was considerably modified during the idea and design phase	**Adaptive capability (responsiveness):** Based on Zahra & Gerard (2002), Wang & Ahmed (2007) mentioned the 'multidimensional construct of adsorptive capabilities', which consists of 'knowledge acquisition, assimilation, transformation and exploitation'
19	We would like to contact your business again in two years' time. If you are positive about that, please provide your email address or telephone number, and name. many thanks!!	Follow up

Source: Author's elaboration; data collected from the research (2019)

3.4 Data analysis

For the qualitative interviews interpretivism was used in the analysis and interpretation of the data. This approach allowed the researchers to place especial importance to the respondents points of views allowing them to understand the social phenomenon that's been researched (Miles & Huberman, 1994; Flowers, 2009).

For the quantitative survey the researchers focused on the research question and from there cross tabulated and filtered the results obtained. Furthermore, a strong emphasis on analyzing and making sense of the numbers was placed and this allowed to reach conclusions.

To tabulate, chart and sorting of the data a slightly different framework version of Ritchie & Spencer's (1994) was used. The framework is divided as the following: 1. familiarization, 2. identifying a thematic framework, 3. indexing, 4. charting, 5. mapping and interpretation.

3.4.1 Familiarization

The survey data and the interviews were analyzed and sorted through the process of immersion. The interview transcripts were read more than once, and the recorded interviews listened several times. Additionally, the survey data was deeply looked at to identify key topics that are related to the thesis.

3.4.2 Thematic Framework

The thematic framework was based in the literature review in chapter two. Thus, data and subjects from the survey were extracted into graphs and charts, the interviews were placed on a predefined template.

3.4.3 Indexing

The framework developed from the literature was applied to the survey and interview transcripts. Thus, the template developed was matched against the data collected and presented in the form of tables and charts.

3.4.4 Charting

The data was arranged according to the themes discussed in the literature review in the chapter two. Hence, graphs and tables were used to present the data obtained from interviews and the survey in the chapter four.

3.4.5 Mapping and Interpretation

The process was carried out by discussing and analyzing the findings from the research and determining their relationship to the literature. A researcher defines a concept, creates a framework and finds correlation in data set which can be used to explain a phenomenon and create suitable strategies (Ritchie & Spencer, 1994). Therefore, the analysis involved the search of concepts, associations and patterns in the data.

3.5 Quality of Analysis

In this section, we present an analysis of the quality of methods and sources used. The validity section will be the focus. Furthermore, we will comment on the ethical and legal basis for this thesis.

3.5.1 Validity

Validity refers to the accuracy in which the analysis of results that represent the social phenomenon is addressed (Silverman, 2014). Reliability employs replicability and consistency as its main predicament (Silverman, 2014). The concept of validity is described by many qualitative researchers and from their different perspectives in qualitative studies. Validity refers on the accuracy in which the analysis of results that represent the social phenomenon is addressed (Silverman, 2014).

Joppe (2000) explains the concept of validity as following: 'Validity determines whether the research truly measures that which it was intended to measure or how truthful the research results are. Researchers generally determine validity by asking a series of questions and will often look for the answers in the research of others' (Joppe, 2000).

Creswell & Miller (2000) argued that the validity of a study is affected by the perception of validity the assumption of paradigm from the researcher but nevertheless- qualitative research needs to demonstrate that certain studies are credible. It has been developed some common procedures for establishing validity in qualitative studies, such as ¨employing member checking, triangulation, tick description, peer reviews and external audits¨ (Creswell & Miller, 2000). Additionally, they suggest that involving at least one of these procedures and reporting findings and the claims produced in our investigations would secure validity. (Creswell & Miller, 2000).

For this study to be valid in our qualitative research we have presented in detail the steps taken for the selection of the companies and the data collected. Additionally, a detailed interview guide was presented. For the face to face interviews a location and time for the respondents choosing was carried out and for the phone interviews the date and time most convenient for the respondents was chosen. In addition, broad explanations of the aim of the research were explained to participants to avoid bias responses. To ensure the validity of the study the researchers confirmed the company's profiles from the interview respondents on their official webpages and social media accounts. Furthermore, all respondents of the interviews were the CEOs of these companies which provided credibility and first-hand insight into their line of action and thinking. Finally, detailed tables and graphs were presented with an analysis explaining and summarizing the results.

In terms of the validity of the quantitative part of the study, is useful to point out that a quantitative researcher's methods emphasize the "use of standardized measures so that the varying perspectives and experiences of people can be fit into a limited number of predetermined response categories to which number are assigned" (Patton, 2001, p.14). The data collection tools need to ensure its validity and the significance of the tool used showing whether the means measure what they supposed to, and whether the means of measurement are accurate. Discussing validity in quantitative research, it can determine whether the research conducted measures what was intended and how truthful the results of the research are (Joppe, 2000).

There are several types of validity that are commonly examined and that are relevant to evaluating the validity of a research study. These criteria are presented below:

- Statistical conclusion validity - looks at statements of a research study on findings based on a proper analysis of the collected data and assessing if there is relation between variables in the research
- Construct validity refers to how well a concept is transformed or translated a concept, idea, or behaviour into a functioning and operating reality, the operationalization (Trochim, 2006).

- Internal validity is considered as an important construct in supporting the design of the research itself
- External validity is the ability to generalize the results to another setting

In discussing validity of our quantitative research, we will mainly be focused on two key dimensions of validity – internal and external validity, and the other subtypes will stay de-emphasized in the remainder of our paper, since the interactive effects of both statistical conclusion and construct validity stay as a part of internal validity.

Addressing the concern that our survey could suffer of internal validity, involving the empirical and theoretical support, we did systematically literature review in order to create adequate multiple variables that could offer alternative explanations. In that way we aimed to minimize the potential for alternative explanations, but whenever the survey is used as a research tool, this risk is not possible to eliminate entirely (Wang, 2010).

Additional treat to internal validity could be non-response bias. We were aware that creating a properly designed survey plays a crucial role in dealing with non-respond bias. Designing the survey, we were aware how important it needed to be an ’interesting, short, clear and concise survey with practical and appealing incentives (Insight States, 2019). Additionally, 30 days were given, this was considered by the researchers as an adequate time for the type of study that was carried out. Broad explanations of the aim of the research was explained to the participants to avoid bias responses

Furthermore, from the survey the last question provided the respondents the option to give contact information for follow up purposes. Also, the respondents from the survey were again 100% the CEOs of these companies which provided credibility and first-hand insight into their line of action and thinking. Finally, detailed tables and graphs were presented with an analysis explaining and summarizing the results.

3.5.2 Limitations of the research methodology

The study had the following limitations:
1. Limited amount of time to conduct the interview (twenty minutes) this due to the schedule of those interviewed. 2. Limited response rate of the survey. 3. Some of the interviews were done over the phone due to lack of time from the respondents. 4. The unwillingness of many companies to take part in the interviews. 5. The short time available to analyze data for several companies. 6. Most of the respondent's native language is Norwegian, and the interviews were carried out in English, this can hamper their ability to fully explain and express themselves. 6. Cross-sectional nature of the study that does not allow for causal relationships to be tested.

3.6 Ethics

When conducting a research its quality, transparency and integrity must be ensured. In terms of the ethics of such research should be emphasized the voluntary nature of it and the participants should be properly disclosed on its details (Cooper & Schindler, 2011).

The research was approved by the University of Stavanger and in the case of interviews, letters were sent out explaining the purpose of the study and asking for permission to be interviewed. In the case of the survey an explanation of the study and contact details from the researchers were provided prior to proceeding with the questions. In both cases an emphasis on the voluntary nature and confidentiality of the interview and survey was presented.

4. Description of the organization: Oslo International Hub and Nordic Angel Program

The following sub chapters will be dedicated to presenting the organization Oslo International Hub and their Horizon 2020 funded Nordic Angel Program which allowed startups that participated in their NAP program to be interviewed and surveyed in order to obtain data and information for this thesis.

4.1 Oslo International Hub

Oslo International Hub was founded in January 2014 and is located at Oscars gate 27, 0352 in Oslo, Norway and serves as a co working space and incubator involved heavily in developing local and international community of startups and individual members. Furthermore, by hosting international business delegations, chambers of commerce it is a center for international cross border business in Oslo. In the first year of operations more than 70 startups move into their facilities and continues to this day to provide a strong meeting place for startups, innovation and international business.

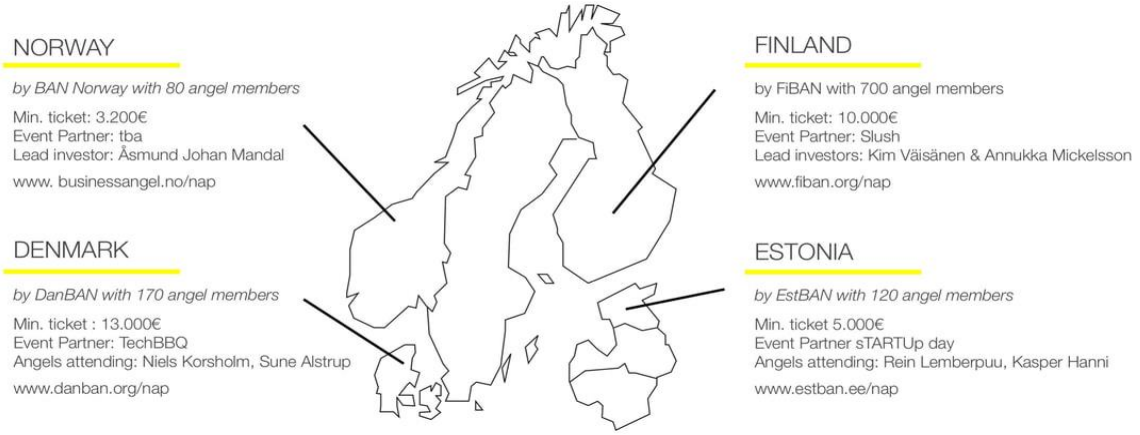
Their mission is to integrate foreigners into the competitive business sector in Norway by expanding their network and assisting them finding positions according to their background. This social entrepreneurship projects is a vibrant contributor to the international and innovation scene in Oslo and Norway.

4.2 Nordic Angel Program

The Nordic Angel Program (NAP) is an international cross-border training and investing program for angel investors. The program lasts two years (2018-2020) and is funded by EU's Horizon2020. NAP is designed to facilitate investment across border and seeks to share best practices within angel investment. Furthermore, this program runs through its umbrella

organization Business Angels Norway *BANNORWAY* which focus is to represent the angel community in Norway successfully achieving to promote legislation that provides tax incentives to angel investors and currently working on an investor visa program. Additionally, BAN provides educational programs, workshops and different programs for potential and experienced angels as well as entrepreneurs. Through an international consortium NAP runs in the following countries is shown in *Figure 14*.

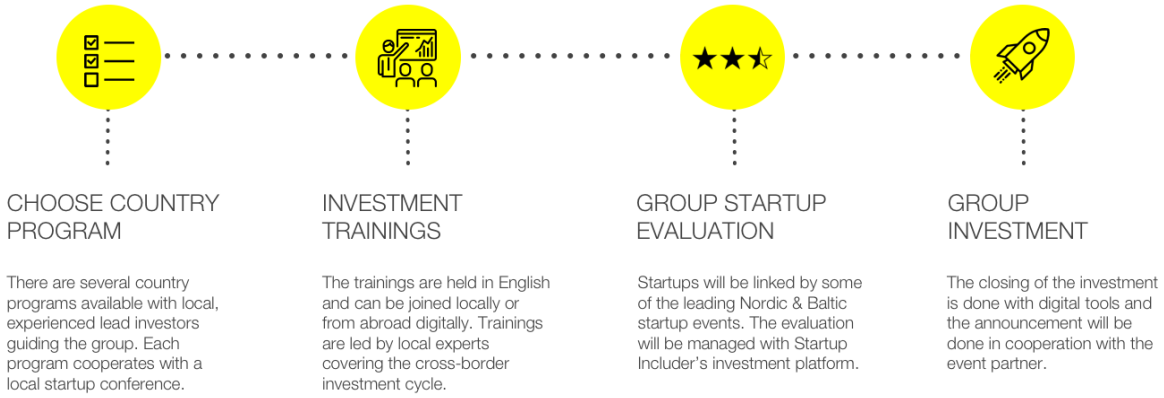
Figure 14: Business Angel program



Source: Business Angels Norway

The program aims is to develop angel investment networks across borders. Additionally, it looks to increase the funding available for startups and to further develop activity within the angel investment community. The program is open to anyone with ambition and that can demonstrate growth potential from idea stage until scale up funding, giving priority to startups in the ICT sector.

Figure 15: Business Angel program timeline.



Source: Business Angels Norway

The program includes training for 3 months in investment, startup evaluation and cross border investor syndication. The winners will receive an investment from a consortium of angel investors. The Startups are also mentored throughout the process. Figure 15 shows the timeline of the process.

The following chapter will present the empirical findings of the study. For this purpose, the four sub research questions will be used with answers from the interviews and the survey.

5. Empirical findings

This chapter aims to determine the stages in the innovation process that stakeholders are involved by analyzing data from startups in the Oslo region. For this, the collected data is presented following the research question and the four sub questions previously stated. Furthermore, each sub questions are followed by a subchapter with the most relevant responses from the interviews and another subchapter describing the relevant findings from the survey. In the case of the interview, the ten respondents are confidential and identified from R1 to R10. For the survey the most relevant responses are presented, for the first two sub research questions descriptive analysis will be used, the last two sub research questions a mean analysis with standard deviation of the responses will be presented. This allows the results of the empirical findings to follow the same structure and provides the reader a coherent framework.

5.1 Sub-research Question 1: Who are the stakeholders typically invited to participate in the process?

In this study we will look at the different stakeholders that were invited in the startup's innovation process. The correct identification and reach out to relevant stakeholders ensure that the feedback received it's coming from stakeholder's that are relevant to the business. The question is aimed at finding out the different stakeholders taking part in the innovation process across industries, research and civil society (Von Schomberg, 2013).

5.1.1 Interviews

Respondents were asked to point out and describe their external stakeholders. Their descriptions vary among the different industries. One of the respondents answered that the

nature of their business allows for multi stakeholder participation singling out Chamber of commerce. OIH. Universities, schools as potential stakeholders.

R1 –

1. **Property developers** - "Because they need to attract buyers and more and more demanding shared services or added service to where they live. Property developer get a question: are shared el cars there? It a way to add a value to their product and they need to build with fewer and fewer parking spots , because the municipality/government requires lower amount of parking spots and at the same time they can save a lot of money by putting in shared cars instead of parking spots¨.

2. **B2B customers** - "In time, car manufactories will be quite important stakeholders for us. New cars sold are dropping, especially in Norway and they need to look at a new business model. Shared cars are already on the radar, many of them are working on them¨.

R2 – **Big bank** - "They could also react as investors in the future in order to buy solar farms and it is faster, because we want to buy solar farms and sell the panel of the users , we don't want our users to pre-order a solar panel and then be waiting a year before they have they own solar panel , so we want them when they buy at they get it instantly.in order to do that you need to buy solar farms ahead of your end users, that why we need big banks ".

R6 - "We don't need any license to do this. This allow us to be more flexible so anyone that has knowledge can impart classes. Chamber of commerce. OIH. Universities, schools can be a potential stakeholder. People for example don't have knowledge for FB analytics management, and this are skills you need. A lot of companies spend a lot of money in campaigns, but our programs have a better value proposition¨.

> **R7** - “The vendors that caters to private events. They are now getting bookings through our platform. The users, who has all their data from their event planning in our solution. Boitano AS have invested with a developer, and our team has invested with their time¨.

We can see by the respondent’s answers that they are knowledgeable about the different stakeholders that can have participation in the development of their companies. As mentioned, their answers were varied and most in line with the industry in which the business belongs to. Among the stakeholders provided by respondents we can list the following:

- Property Developers
- Vendors
- Chamber of commerce
- B2B customers
- Banks
- Broadcasters
- Brands
- Customers (Users)
- Investors
- Property developers
- OIH
- Universities
- Schools

When asked if multi-stakeholder participation a practice / policy of the company or is this the first project that contemplates this participation, for the most part we received short answers, the respondents seemed not to be interested in broad responses or not seemed knowledgeable. This can denote lack of interest or unawareness of the benefits the inclusion of multi stakeholders can have in their companies. One of the respondents showed interest in the inclusion of multi stakeholders in future projects.

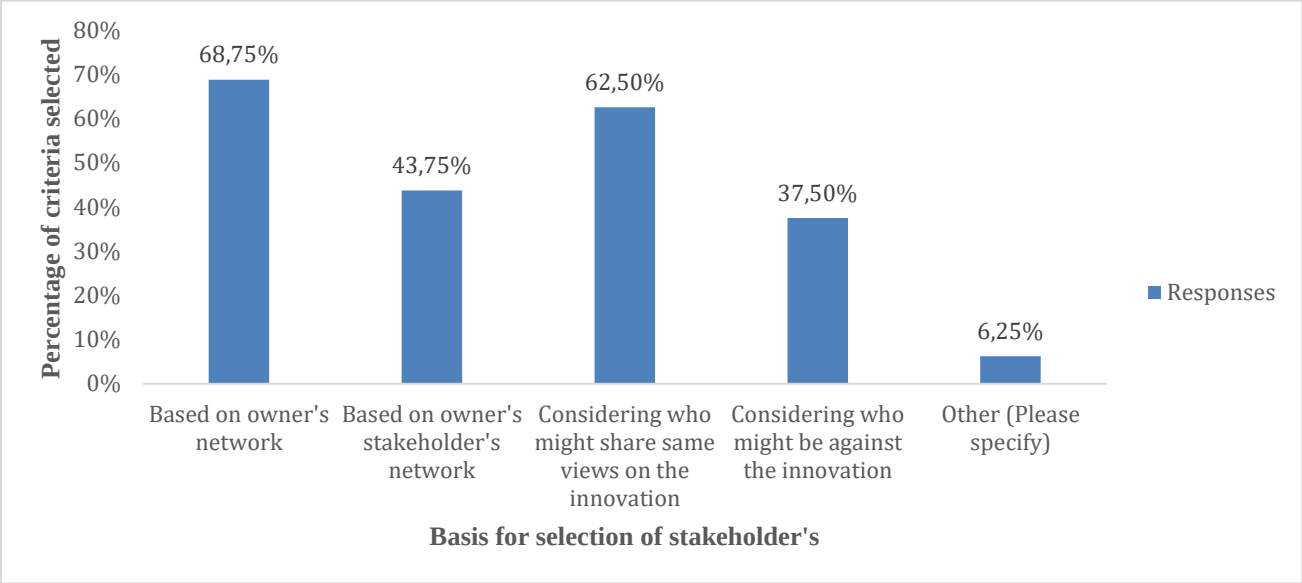
R6 - ¨Yes, it is¨.

R7 - "We've only had this project. But we are open to it in next projects¨.

5.1.2 Survey

In Figure 16 it is presented the answers for the question: How do you select stakeholders? We can observe that 68.75% of respondents select stakeholders based on the owner's network. In second place at 62.50% is the opinion: based on those who have the same views related to the innovation in question. We can then see that owners of startups have a major influence in selecting the stakeholders that influence their decision making. In table number 7 of the survey when asked about the importance of several stakeholders the response was that potential users, customers and partners received 47.06% in the very important and important options both in the discussion face of the innovation process and the development face respectively. The same question provided respondents with an additional option that included field experts, researchers, city employees, nonprofits, civil society organizations, legislators and community leaders these received.

Figure 16: Stakeholder inclusion in the innovation process



Source: Author's elaboration; data collected from the research (2019)

Table 7: Importance of stakeholder's involvement in the innovation process

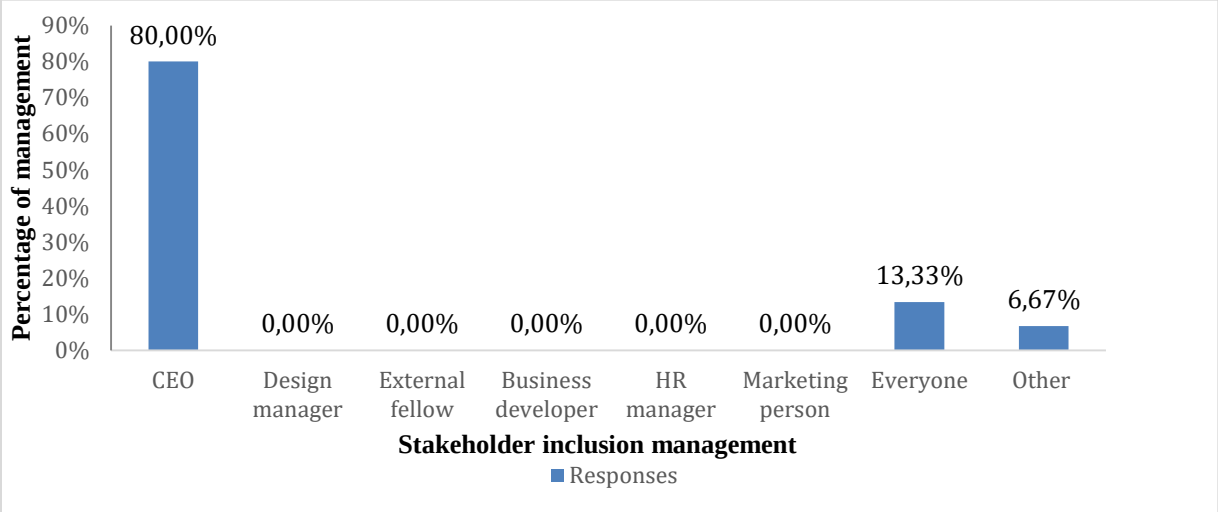
	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential users/customers/partners were involved in the discussions about our solution	0.00%	0.00%	5.88%	17.65%	29.41%	47.06%
Potential users/customers/partners were actively involved into development process of our solution	5.88%	0.00%	17.65%	11.76%	47.06%	17.65%
Other stakeholders (filed experts, researchers, city employees, non-profits, civil society, organizations, legislators, community leaders) were involved in the discussions about our solution	5.88%	11.76%	11.76%	29.41%	17.65%	23.53%

Source: Author's elaboration; data collected from the research (2019)

The answers presented in Table 7 and Figure 15 are consistent with the ones in Figure 17 which asks: 'Who from your company is in charge to select, invite to participate and manage the information developed through stakeholder participation?'. A total of 15 respondents and 2 skipped to answer gave 80% to the CEO of the company, 13.33% responded everyone and

6.67% responded others. This serves as evidence that the founders of the startups are for the most part overseeing and micromanaging all the stages related to stakeholder inclusion.

Figure 17: Stakeholder inclusion selection, invitation and information management



Source: Author's elaboration; data collected from the research (2019)

5.1.3 Summary

The findings show that mainly economic stakeholders are been invited to participate in the innovation process. We recall economic stakeholders as those who have a financial interest within the organization (e.g., employees and suppliers) and non-economic as those who are outside the organization and have no financial interest in it (e.g., NGOs and research institutes), (Blok et al 2015). Furthermore, other researchers have argued for multi-stakeholder involvement in order to include different actors from industries, civil society and research. As shown on Table 7, the lack of non-economic stakeholders is evident (Von Schomberg, 2013).

This can be in part due to the nature of the startups where founders make initially most of the decisions and their focus is mainly on business development. The interviews showed that over 70% of the decision making relating to the stakeholder selection relies on them. In the

case of the survey as expected been startups relatively young companies with few employees a lot of the decision making relies on the founders or CEO of the company with an 80% range as shown in Figure 16 and Figure 17.

5.2 Sub-research Question 2: At what stage of the innovation process do stakeholders participate?

This part focuses on different questions regarding the stages in which the startups researched are engaging stakeholders. As mentioned in chapter 1.1 Problem statement, the innovation process consists of five stages: 1, Idea stage 2, Detail design 3, Testing 4, Launch 5, Post launch (Tidd & Bessant, 2014). We aimed to find out at which stage startups seek stakeholders' opinions and determine if their practices match up to the relevant theory within innovation management.

5.2.1 Interviews

During the stakeholder inclusion part of the interviews we asked the respondents: 'Who contributed on the early stages of the innovation process?'. Since it was an open-ended question, some of them were quick to answer founders. The researchers then proceeded to mention different stakeholders that can be considered. Table 8 shows their answers.

Table 8: List of stakeholders in the early stage

List of Stakeholders in the early stage
Founders (Around 70%)
Innovation Norway (Around 30%)
Different Hubs in Oslo/ Hub Startups/ Partner company "Get Started"
Advisory board
Friends
Freelance

Source: Author's elaboration; data collected from the research (2019)

When asked if the same stakeholders were used in all stages of the development process two of the respondents pointed out that they reached in the launch and post launch stage mainly to customers and end users. Most of the them were economic stakeholders as we can observe in the following statements show.

> **R1** – "Contacted an external stakeholder who was a chairman in a housing, which led to communication through their channels to their residents/tenants. Both customers that are end users and property developers who are also customers were used and reached out to them directly¨.
>
> **R7** - ¨Used vendors, team and users to develop different functionality in our solution¨.
>
> **R9 –** "We reached out to customers in the post launch stage to inquire about their satisfaction with the product and to seek potential improvements ".

5.2.2 Survey

In this study it was asked the importance of stakeholders on the different stages of the innovation process. The most relevant answers for the purpose of the study came at the idea stage, launch and post launch. *Table 9* shows the importance of stakeholders at the idea stage of the innovation process. The responses highlighted the lack of participation of politicians with 64.71%, chambers of commerce and OIH members both at 58.82% not participating. Other economic stakeholders didn't such as users, investors, suppliers or distributors

received less than 40% participation rate in the somewhat important, important and very important categories.

Table 9: The importance of stakeholders at the idea stage of the innovation process

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential/existing users, customer	11.76%	5.88%	5.88%	23.53%	**35.29%**	17.65%
Suppliers or distributors	17.65%	5.88%	**35.29%**	11.76%	17.65%	11.76%
Investors	18.75%	12.50%	6.25%	**37.50%**	0.00%	25.00%
Research and development organizations (scientists)	23.53%	11.76%	29.41%	11.76%	0.00%	23.53%
Oslo international hub members	**58.82%**	5.88%	11.76%	17.65%	0.00%	5.88%
Industrial clusters as organization	41.18%	17.65%	17.65%	17.65%	5.88%	0.00%
Chamber of commerce as organization	**58.82%**	17.65%	11.76%	5.88%	5.88%	0.00%
Municipalities	47.06%	23.53%	23.53%	0.00%	5.88%	0.00%
Politicians	**64.71%**	23.53%	11.76%	0.00%	0.00%	0.00%
Common people	29.41%	11.76%	11.76%	**29.41%**	17.65%	0.00%
Community leaders	47.06%	17.65%	23.53%	0.00%	11.76%	0.00%
NGO	50.00%	12.50%	25.00%	6.25%	6.25%	0.00%

Source: Author's elaboration; data collected from the research (2019)

Regarding the importance of stakeholders at the detail design stage and shown in Table 10, important non-economic stakeholders' stand out in large proportions as not participating in larger trends than at the idea stage. Politicians received 70.59% followed by OIH member, chambers of commerce and municipalities at 64.71%. In the case of municipalities stands out in particular since a lot of the startups questioned require state regulation and the researchers assume in these cases heavy participation from city officials will be present.

Table 10: The importance of stakeholders at the detail design stage of the innovation process

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential/existing users, customer	23.53%	5.88%	5.88%	5.88%	**35.29%**	**23.53%**
Suppliers or distributors	23.53%	11.76%	5.88%	17.65%	**35.29%**	5.88%
Investors	29.41%	5.88%	17.65%	**29.41%**	11.76%	5.88%
Research and development organizations (scientists)	31.25%	0.00%	6.25%	18.75%	25.00%	18.75%
Oslo international hub members	**64.71%**	5.88%	5.88%	11.76%	11.76%	0.00%
Industrial clusters as organization	52.94%	11.76%	5.88%	11.76%	11.76%	5.88%
Chamber of commerce as organization	**64.71%**	17.65%	11.76%	0.00%	5.88%	0.00%
Municipalities	**64.71%**	5.88%	17.65%	5.88%	5.88%	0.00%
Politicians	**70.59%**	17.65%	5.88%	0.00%	5.88%	0.00%
Common people	41.18%	5.88%	11.76%	23.53%	11.76%	5.88%
Community leaders	47.06%	11.76%	11.76%	17.65%	11.76%	0.00%
NGO	52.94%	23.53%	11.76%	5.88%	5.88%	0.00%

Source: Author's elaboration; data collected from the research (2019)

Regarding the importance of stakeholders at the testing stage the same important non-economic stakeholders continue the trend in large proportions as not participating in comparison to the previous stage. As presented in Table 11, politicians received 86.67% followed by OIH members 73.33%, chambers of commerce 80% and municipalities saw an increase in the no participation rate at 73.33%.

Table 11: The importance of stakeholders at the testing stage of the innovation process

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential/existing users, customer	13.33%	6.67%	13.33%	13.33%	6.67%	**46.67%**
Suppliers or distributors	20.00%	6.67%	6.67%	20.00%	26.67%	20.00%
Investors	53.33%	6.67%	0.00%	**26.67%**	6.67%	6.67%
Research and development organizations (scientists)	46.67%	0.00%	6.67%	20.00%	13.33%	13.33%
Oslo international hub members	**73.33%**	0.00%	6.67%	13.33%	6.67%	0.00%
Industrial clusters as organization	66.67%	13.33%	13.33%	6.67%	0.00%	0.00%
Chamber of commerce as organization	**80.00%**	6.67%	6.67%	6.67%	0.00%	0.00%
Municipalities	**73.33%**	0.00%	0.00%	13.33%	13.33%	0.00%
Politicians	**86.67%**	6.67%	0.00%	0.00%	6.67%	0.00%
Common people	66.67%	6.67%	0.00%	20.00%	0.00%	6.67%
Community leaders	60.00%	6.67%	13.33%	13.33%	6.67%	0.00%
NGO	**73.33%**	6.67%	13.33%	0.00%	6.67%	0.00%

Source: Author's elaboration; data collected from the research (2019)

When asked the importance of stakeholders at the Launch stage of the innovation process, as seen in

Table 12: The importance of stakeholders at the Launch stage of the innovation processTable 12, 53.85% of respondents answered as very important the participation of potential and existing users and in second came suppliers or distributors with 38.46%. From the respondents, 30.77% defined potential/existing users or customers as important, the same score was given to investors in the important category. Other stakeholders where deemed as not participant at this stage, for example politicians didn't participate in 92.70% of respondents, NGOs received the second lowest with 83.33% community leaders and chambers of commerce as well were not participant in high percentages with 76.92%.

Table 12: The importance of stakeholders at the Launch stage of the innovation process

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential/existing users, customer	7.69%	0.00%	7.69%	0.00%	**30.77%**	**53.85%**
Suppliers or distributors	30.77%	0.00%	0.00%	7.69%	23.08%	**38.46%**
Investors	30.77%	0.00%	7.69%	7.69%	**30.77%**	23.08%
Research and development organizations (scientists)	46.15%	7.69%	0.00%	23.08%	15.38%	7.69%
Oslo international hub members	**69.23%**	0.00%	15.38%	7.69%	0.00%	7.69%
Industrial clusters as organization	61.54%	7.69%	0.00%	15.38%	7.69%	7.69%
Chamber of commerce as organization	**76.92%**	7.69%	0.00%	7.69%	0.00%	7.69%
Municipalities	**69.23%**	7.69%	7.69%	0.00%	7.69%	7.69%
Politicians	**92.31%**	7.69%	0.00%	0.00%	0.00%	0.00%
Common people	61.54%	7.69%	0.00%	7.69%	7.69%	15.38%
Community leaders	**76.92%**	15.38%	0.00%	0.00%	7.69%	0.00%
NGO	**83.33%**	8.33%	0.00%	0.00%	8.33%	0.00%

Source: Author's elaboration; data collected from the research (2019)

The interviewers also asked about the importance of stakeholders at the post launch stage of the innovation process, as revealed in Table 13. In this sense, the respondents placed as important and very important suppliers or distributors and potential/existing users, customers with 27.27% and 45.45% respectively. Lowest marks were received by OIH members with 72.73%, politicians, common people, community leaders and NGOs were second lowest with 63.64% in the: They did not participate column.

Table 13: The importance of stakeholders at the post launch stage of the innovation process

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential/existing users, customer	18.18%	0.00%	0.00%	9.09%	**27.27%**	**45.45%**
Suppliers or distributors	36.36%	0.00%	0.00%	18.18%	18.18%	27.27%
Investors	36.36%	0.00%	9.09%	18.18%	18.18%	18.18%
Research and development organizations (scientists)	54.55%	18.18%	9.09%	0.00%	18.18%	0.00%
Oslo international hub members	**72.73%**	0.00%	9.09%	9.09%	9.09%	0.00%
Industrial clusters as organization	54.55%	18.18%	9.09%	9.09%	9.09%	0.00%
Chamber of commerce as organization	54.55%	18.18%	18.18%	0.00%	9.09%	0.00%
Municipalities	45.45%	9.09%	18.18%	27.27%	0.00%	0.00%
Politicians	**63.64%**	0.00%	36.36%	0.00%	0.00%	0.00%
Common people	**63.64%**	0.00%	27.27%	9.09%	0.00%	0.00%
Community leaders	**63.64%**	9.09%	18.18%	0.00%	9.09%	0.00%
NGO	**63.64%**	9.09%	18.18%	9.09%	0.00%	0.00%

Source: Author's elaboration; data collected from the research (2019)

5.2.3 Summary

We have now presented different questions and answers that aim to analyze the different stages in which startups engage the relevant stakeholders. The study can identify the preference of economic stakeholders over non-economic and respondents favor to reach out to them at the launch and post launch stages of the innovation process. An argument can be made that earlier stages like idea stage and detail design are the preferred stages since they allow the company to absorb and adapt to the feedback from stakeholders before the testing stage (Maines da Silva, Bitencourt, Iakovleva, 2019).

5.3 Sub research Question 3: How does stakeholder inclusion relate to absorption and adaption of knowledge?

This sub research question seeks to understand if startups that actively include stakeholders in their innovation process also develop some mechanisms for absorption of their insights. The higher the absorptive capacity means the higher dynamic capability, simultaneously improving organizational skills within a company (Wang&Ahmed, 2007).

5.3.1 Interviews

The researchers asked questions pertaining the importance placed by the startups in users and their importance to them, the following questions for example where done: Do you count with user's participation during the product/service development process? Do you consider important the participation of external stakeholders at what stage? Why? The respondents were positive regarding user's participation during the product/service development process and the importance of stakeholder's participation. One respondent highlighted the value of primary relations.

Regarding user involvement:

> **R6** - "We have been using myself and other users. I have been studying for long time and in my studies times, I concluded that we don't learn the necessary skills in the real world. I discovered that creating a product that gives you the essentials is important. Maybe in Stanford you can find this but, in most universities, you can't find it. We believe have find a niche in the market and my product is user based¨.

> **R7** - "Yes, I have done several market surveys, and have used beta testers on the solution. We have continuous surveys to know what our users want. Regarding stakeholder's participation:

R6 – "Yes, I value primary relationships built over time. Is better now you know the people and have relevant contact. Also, they can bring additional clients and is a change reaction. For this you need a good product¨.

In the question: How important is user's contribution?

R4 - "We had both individuals, we had our 1st clients to see if how we can build a product.

The researchers asked the following question: **'**Has the idea changed in relation to the initial plan based on stakeholder input?'. This was a question that seemed to gather special attention and their answers explicative and of interest for the researchers since by demonstrating adaptive capabilities a company then shows a level of reflection (Owen, 2012) and absorptive capacity (Wang&Ahmed, 2007). Most of the startups interviewed showed capacity to adapt, as mentioned in the theory part adaptive capability is 'the organization's ability to maintain competitive advantage by modifying, reconfiguring or interconnecting resources, capabilities and competences, opportunities'' (Kaehler, Busatto, Becker, Hansen & Santos, 2014). One respondent said the idea has not changed but their spending habits did change due to the feedback received.

The following are different statements received.

R1- "Yes. 1st we thought we are going to make free slots spots, something like electric cars from VY (previous NSB), that was our initial idea, but we more and more gravitated to where are property developers , because if we can solve the mobility needs where people live , then we can have much higher impact from society, much more sustainable solution¨.

R2- "It has been changed a lot. we were 3 young guys who wanted to star energy solar company and the other 2 guys are more traditional, we look at technology and

the internet in a completely different way. And having background in e commerce and lets crowdfund solar panels, let's make people be owners of the solar panels, and when we started the company we were doing more in a traditional way (going to banks, meetings), but we realize how important is to create own brand and this let to be owner of the solar panels¨.

R3- "Yes. In the beginning it was pure based on product sales and to make money out of web shops like amazon and eBay and now has been moved into more complete solutions for broadcasters and television to be able to provide one stop shop for everything ¨.

R4- "I came up with this idea 5 years ago, and in these last 5 years both the startup environment and technology has had very positive development , so I think we will be able to deliver very better and more modern product due to that and to sum up, what we solve is the same, but we do it better¨.

R5- "It has been involving all around the way. 3 years ago, we had totally different messages. More ppl we meet and our customers feedback, we have been re-finding our idea and also the message- how we communicate all the way long , we are improving ourselves over the time, but the core idea is still the same- disruptive diabetes care by our solution¨.

R6- "Basically, the same idea, has change in budget and spending habits¨.

R7- "Yes, we have prioritized the modules in the solution differently, because of feedback from the users. We have also expanded the value proposition for the vendors¨.

5.3.2 Survey

When asked regarding the tools used for external stakeholder involvement, as shown in Table 14, the respondents answered individual meetings and workshops as often used with 53.33% and 40% respectively. The use of surveys and focus groups are denoted highly in the not used at all and rarely used with 40% and 33.33% respectively. Furthermore, in terms of methods most used design thinking and discussion with experts received the 3rd and 4th highest ranking both at 33.33%.

Table 14: Tools used for external stakeholder involvement

	Not used at all	Rarely used	Used from time to time	Often used	Used most of the time
Individual meetings	0.00%	6.67%	20.00%	53.33%	20.00%
Workshops	6.67%	26.67%	20.00%	40.00%	6.67%
Collective dialogue session	28.57%	14.29%	14.29%	28.57%	14.29%
Design thinking process	20.00%	6.67%	26.67%	33.33%	13.33%
Informal interactions (social events etc)	13.33%	6.67%	53.33%	13.33%	13.33%
Surveys	33.33%	40.00%	6.67%	13.33%	6.67%
Feedbacks through social media	31.25%	18.75%	18.75%	25.00%	6.25%
Focus group	33.33%	33.33%	13.33%	13.33%	6.67%
Discussion with groups of experts	26.67%	6.67%	20.00%	33.33%	13.33%

Source: Author's elaboration; data collected from the research (2019)

One of the respondents commented that design thinking is their main method when reaching out to stakeholders. The comment is important to highlight since it denotes that design thinking is used exclusively in these circumstances by a company and denoted such methods can be used as the sole method for managing stakeholder interaction.

> Our main method is design thinking so stakeholders are very important.
> 15.05.2019 11:20 a.m.

In the next part which is represented by multiple choice, it is possible to look at the different ways the respondents engage stakeholders. The results are shown in Table 15.

Table 15: Engaging stakeholders

	Minimum	Maximum	Median	Mean	Standard deviation
We have routines to get stakeholders opinion and to involve them into the innovation process	1	5	3.5	3.38	1.45
We ensure that all employees are aware of the feedback from users/customers/partners/stakeholders	2	5	4.5	4.25	0.9
It is a good established routine to discuss stakeholder feedbacks and improvements of the solution	2	5	5	4.25	1.03
We often get new ideas after interaction with users/stakeholders	3	5	4	4.31	0.68

Source: Author's elaboration; data collected from the research (2019)

In the quote: We have routines (repeated procedures) to get stakeholders opinion and to involve them into the innovation process (surveys, digital feedback, face-to face feedback, other means) - Mean is 3.38 which describes that some of the respondents partially or fully agree to this statement. But the SD is 1.45 with a median of 3.50 which can be recognized that some respondents also disagrees with this since the spread from mean is higher. Therefore, some organizations have routines, and some does not.

In the quote: We ensure that all employees are aware of the feedback from users/customers/partners and other stakeholders- Mean is 4.25 which depicts that the respondents partially or fully agree to this statement. The SD is 0.90 which displays that results are much reliable. This means the company ensures that all employees are aware of the feedback from users.

In the quote: It is a good established routine to discuss user/ stakeholder feedbacks and possible improvements of the solution- Mean is 4.25 which depicts that the respondents partially or fully agree to this statement. The SD is 1.03 which displays that results are much reliable, but few respondents disagree too. This illustrates it is a good established routine to discuss user/stakeholder feedbacks

In the quote: We often get new ideas after interaction with users/stakeholders- Mean is 4.31 which shows that the respondents partially or fully agree to this statement. The SD is 0.68

which displays that results are much consistent. Thus, the organization often gets new ideas after interaction with users/stakeholders

5.3.3 Summary

In this chapter we looked at different questions regarding absorptive and adaptive capabilities of the startups in the study. In the results we can observe that stakeholder interaction, feedback and ideas are valued but there is a lack of a defined routine or method that can properly manage these interactions. From the respondents answers we can see individual meetings and primary relationships are regarded as the primary method to reach out to stakeholders. Also, it is possible to note from the responses of both the interview and the survey that there is a degree of absorptive capabilities in the firms but considering the limited segment of stakeholders been involved, these capabilities are limited in reach.

5.4 Sub-research Question 4: How does stakeholder inclusion relate to innovation capability of the firm?

This part of the study will look at how the inclusion of stakeholders is relatable to the ability of a firm to adapt and innovate. By looking into the startup's actions relating inclusion we seek to understand if startups that actively include stakeholders can reflect and adapt based on their inputs.

5.4.1 Interviews

The researchers asked the following question: What method was used for these participations (interview, focus group, questionnaire, workshops)? Table 16 shows the answers gathered.

Table 16: Methods used to reach stakeholders

Methods	Percent
Interview	40
Focus group	30
Questionnaire	30
Workshops	30
Other Methods – User testing, Preaching competitions, Instagram marketing, Networking	

Source: Author's elaboration; data collected from the research (2019)

From the interviews done we saw that networking and primary unofficial meetings seems to be the preferred method used by respondents, most of these were one on one interviews. When asked: Was the same method used at all stages of the product development process? The researchers received the following statements:

> **R4** - "Yes, because the easiest way of introducing a company is through network, but after that it must be a traditional marketing strategy.
>
> **R6** - "This is mostly the same. For example, I got a contract by playing squash we bonded, and I got a very lucrative contract cause of this. Another contract was signed because I knew the person before. I think because I'm a decision maker I can do this, if it's a board it will be more difficult.

When asked: 'Did you developed new processes or routines to manage stakeholder participation?'

R8 - "We have mainly stuck with what has worked so far but of course will be open to add other options''.

R10 - "Not really, we are for the most part networking at events and personal interviews''.

5.4.2 Survey

The startups were presented with different questions regarding their adaptive capabilities. Their answers are shown in Table 17.

Table 17: Adaptive capabilities of startups

	Minimum	Maximum	Median	Mean	Standard deviation
Our solution was considerably modified during the idea and design phase	3	5	5	4.5	0.61
Our solution was considerably modified during the test phase	2	5	4	3.94	0.97
Our solution was considerably modified during the launch and post-launch phase	2	5	3	3.43	0.9
Our organizational structure has changed during the innovation process	1	5	4	3.63	1.22
We engaged with new partners and distributors during the innovation process	2	5	4	4.13	0.86
We managed to provide speedy response to market change	2	5	4	4	0.73
We have considerably improved our competences during the innovation process	3	5	4	4.31	0.68

Source: Author's elaboration; data collected from the research (2019)

In the quote: Our solution was considerably modified during the idea and design phase – Mean is 4.5 which depicts that the respondents partially or fully agree to this statement. The SD is 0.61 which displays that results are much reliable. The solution was considerably modified during the idea and design phase.

In the comment: Our solution was considerably modified during the test phase - Mean is 3.94 which portrays that most of the respondents partially or fully agree to this statement. But the SD is 0.97 which is higher, so it can be identified that some of the respondents disagree with this statement. According to results the solution was considerably modified during the test phase.

In the quote: Our solution was considerably modified during the launch and post-launch phase - Mean is 3.43 which describes that some of the respondents partially or fully agree to this statement. But the SD is 0.90 with a median of 3.00 which can be recognized that some of the respondents neither agree nor disagree with this statement.

In the quote: Our organizational structure (number of employees, their competence, member of advisory board) have changed during the innovation process - Mean is 3.63 which describes that almost 50% of the respondents partially or fully agree to this statement. But the SD is 1.22 with a median of 4.00 which displays that the responses are spread throughout the scale. Organizational structure has changed during the innovation process for considerable amount of organizations.

In the quote: We engaged with new partners and distributors during the innovation process- Mean is 4.13 which depicts that the respondents partially or fully agree to this statement. The SD is 0.86 which displays that results are much reliable. The firms engage with new partners and distributors during the innovation process according to the results.

In the quote: We managed to provide speedy response to market change- Mean is 4.00 which shows that most of the respondents partially or fully agree to this statement. The SD is 0.73 which displays that results are much consistent. Results depicts speedy responses to market change was carried out.

In the quote: We have considerably improved our competences during the innovation process- Mean is 4.31 which shows that most of the respondents partially or fully agree to this statement. The SD is 0.68 which displays that results are much consistent since the spread is less from the mean. Competences were considerably improved during the innovations process according to results.

5.4.3 Summary

This chapter explored startups answers regarding stakeholder inclusion and its relationship with their innovation capabilities. The trend of preferring personal and primary relationships to reach out to stakeholders maintains. The respondents in its majority didn't implement any procedure changes to their stakeholder inclusion routines, methods or organizational structure but did show ability to engage new economic potential users and ability to adapt to market changes which shows innovative capabilities. In terms of modifying their innovation, as seen on table 16, the testing, launch and post launch stages received mixed results meaning some agree and disagree that changes were done at these stages. In the case of the survey results the changes were consistently carried out at the idea stage, we tend to believe that since these changes are non-inclusive of non-economic stakeholders and are not conclusively been done at detail design and testing stages the innovation improvement is limited in reach and scope.

6. Analysis and discussion

After having held the interviews and the survey the researchers can observe that economic stakeholders are predominantly invited over non-economic stakeholders to take part in the innovation process of the startups in the study. As seen from data gathered in the interviews and the survey, most stakeholder inclusion decision making relies on the founders of the company which can be a reason why economic stakeholders are been favored. Findings showed that between 70-80 percent of the inclusion is made by the CEO of the startups. Since these are small companies ranging from 0-20 employees, it highlights the centralized influence in the stakeholder inclusion process the founders of the startups have.

The researchers also noted that the startups researched encourage and don't suppress innovative thinking since most of them replied they encourage innovative ideas among management. We defined earlier in the theory part the innovation management as the invention and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further organizational goals." (Birkinshaw, Hamel & Mol, 2008). A requirement of the companies both in the survey and the interview was that it had to be startups with maximum 5 years of founding and innovative in principle. The researchers also considered valuable to inquire about their innovation management practices. In the survey for example, when presented different questions regarding how innovation is managed and accepted by management, we could see that most of the companies encourage innovation and is a concept widely accepted.

From the survey for example and as shown in Table 18, we can observe innovation capabilities from the startups, in the comment: Management actively seeks innovative ideas- Mean is 4.76 which shows that the respondents partially or fully agree to this statement. The SD is 0.42 which displays that results are very reliable. This means management actively seeks innovate ideas.

Table 18: Startups innovation capabilities

	Minimum	Maximun	Median	Mean	Standard deviation
Management actively seeks innovative ideas	4	5	5	4.76	0.42
Innovation, based on research results, is readily accepted in our organization.	4	5	5	4.59	0.49
Innovation is readily accepted by management	2	5	5	4.59	0.77
People are penalized for new ideas that don't work	1	3	1	1.35	0.68
Innovation in our organization is encouraged	3	5	5	4.76	0.55

Source: Author's elaboration; data collected from the research (2019)

In the quote: Innovation, based on research results, is readily accepted in our organization- Mean is 4.59 which displays that the respondents partially or fully agree to this statement. The SD is 0.49 which displays that results are very consistent, so Innovation based on research results is readily accepted in organizations.

In the quote: Innovation is readily accepted by management- Mean is 4.59 which displays that the respondents partially or fully agree to this statement. The SD is 0.77 which displays that results are very steady, so it can be concluded that innovation is readily accepted by management.

In the quote: People are penalized for new ideas that don't work- Mean is 1.35 which displays that the respondents hardly agree to this statement meaning people are never penalized for new ideas that don't work.

The startups were inquired regarding encouragement of innovation. To the quote: Innovation in our organization is encouraged- Mean is 4.76 which shows that the respondents partially or fully agree to this statement. So, innovation is encouraged in organizations.

Since innovation management has the goal to organize and structure companies with efficient procedures (Birkinshaw & Hamel, 2008), the encouragement of innovation from the startups in the study shows that management is open to be engaged and empower their employees in the implementation of innovative ideas.

From the user involvement perspective we mentioned earlier in the theory how the high rate of failure among startups has a lot to do with companies that lack decision making centered around customers opinions (Leary & Kaulartz, 2019), we can argue that a strategy geared towards co development model of user involvement is the best fit for the companies in the study since this can improve the competitive advantage of startups. This is possible by focusing on the user as the main driver behind the innovation developed, the user's ideas and opinions in a co-development method can influence the creation of mainstream innovation (Tidd&Bessant, 2014). Additionally, it can add commercial and social value to the innovation since it's been driven by a network of individual users (Von Hippel, 2005).

RQ: How stakeholder's inclusion contributes to the innovation process?

After going through all the interviews and analyzing the results from the survey, we can observe that the respondents seem comfortable with stakeholders' involvement in the innovation process. The answers received show that mainly economic stakeholders are been included. In Table 19 we can see the survey respondent's answers.

Table 19: Stakeholder's inclusion

	Minimum	Maximum	Median	Mean	Standard deviation
Potential users/customers/partners were involved in the discussions about our solution	3	6	5	5.18	0.92
Potential users/customers/partners were actively involved into development process of our solution	1	6	5	4.17	1.29
Other stakeholders (filed experts, researchers, city employees, non-profits, civil society, organizations, legislators, community leaders) were involved in the discussions about our solution	1	6	4	4.12	1.49

Source: Author's elaboration; data collected from the research (2019)

When presented with the quote: Potential users/ customers/ partners were involved in the discussions about our solutions- Mean is 5.18 which shows that mostly the respondents partially or fully agree to this statement. SD is 0.92 and we can say data is reliable. According to results potential users, customers and partners were involved in the discussion in regarding solutions in the company.

In the quote: Potential users/ customers/ partners were involved into development process of our solution- Mean is 4.17 which shows that mostly the respondents partially or fully agree to

this statement. SD is 1.29 and we can say that results are spread and partially reliable. According to results potential users, customers and partners were actively involved in the development process of the solution.

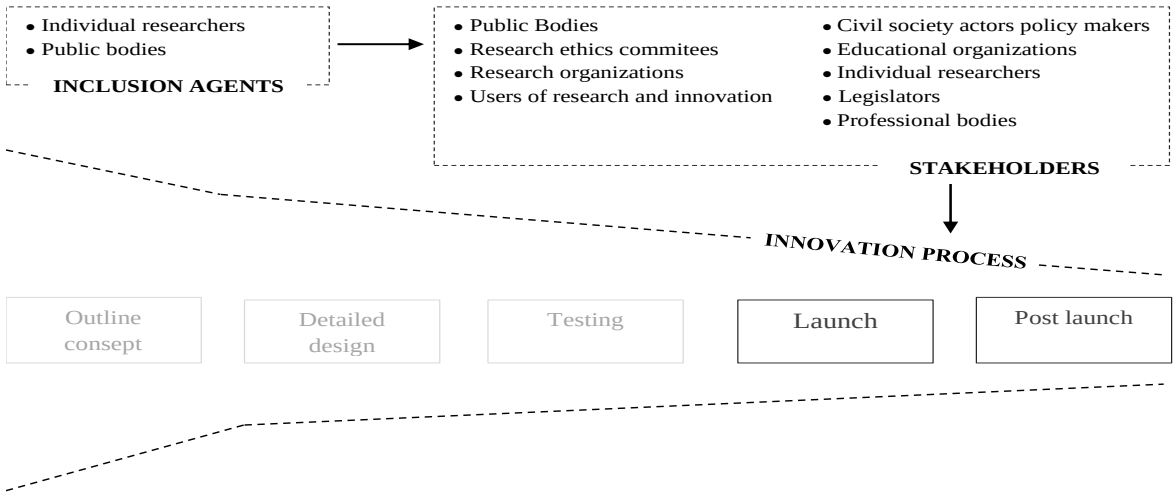
When presented with the comment: Other stakeholders were involved in the discussions about our solution- Mean is 4.12 which shows that mostly the respondents partially or fully agree to this statement. SD is 1.49 and we can say that results are spread and partially reliable so other stakeholders such as filed experts, researchers, city employees, non-profits, civil society organizations, legislators, community leaders were involved in the discussions about the solutions.

Another finding is that startups are responsive to the opinions and points of views from internal and external stakeholders. The researchers observed in their answers that the responsiveness tool from RRI theory is been used since most of them have changed direction in different degrees, this is due to stakeholder opinions, new knowledge, emerging perspectives, views and norms (Stilgoe et al. 2013). Additionally, they seem to value stakeholders' opinions since most of the startups in the study demonstrated some level of dynamic capabilities having experience changes in the development of their innovation due to stakeholder's opinion and feedback. Specifically, in terms of absorptive capacity in which companies have the ability to take external information and transform it to be knowledge used by the firm (Wang & Ahmed, 2007), we tend to believe the startups in the study are in the lower degree of these capabilities. As mentioned by Wang, adaptive capability emphasizes the capacity to adjust on emerging market opportunities, the higher the absorptive and adaptive capacity means a higher dynamic capability, which improves organizational skills within a company.

Despite this, the stakeholders included in the innovation process are mainly economic stakeholders and the dynamic capabilities that the findings show are limited since they are lacking a defined method to sort and manage stakeholder's inclusion. This means that their ability to absorb, adapt and reflect on the stakeholder's feedback is limited and based in informal meetings and primary relationships (Tidd and Bessant, 2014), The findings also

show that most stakeholders inclusion and interactions are been taken for the most part at the launch and post launch stages, mainly by economic stakeholders. As mentioned, economic stakeholders are those that have a financial interest in the company, these can be shareholders, owners, partners, investors, employees, lenders, creditors among others. Since these interactions are been taken in the stages were the innovation is in a ready to market or already in the market (Launch and post launch stages), valuable feedback that can be obtained in early stages such as the outline concept and detail design stage are not being gathered. We recall the innovation process consist of five stages: 1. Idea stage 2. Detail design 3. Testing 4. Launch 5. Post launch (Tidd & Bessant, 2014).

Figure 18: Stages of stakeholder participation of start-ups in the context of responsible innovation



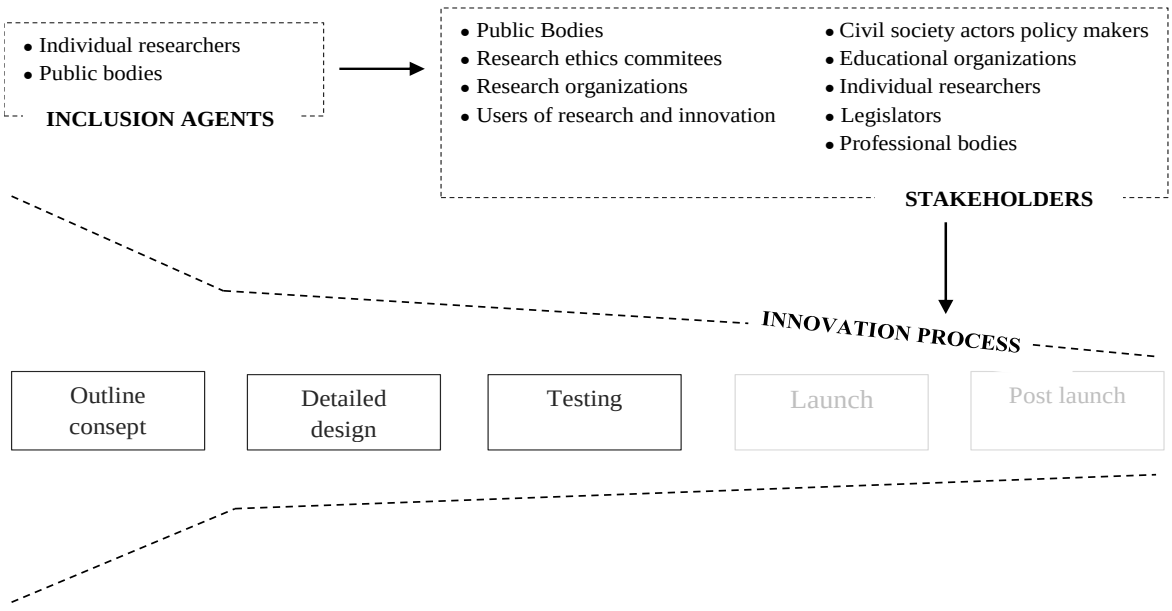
Source: Maines Da Silva, Bitencourt & Iakovleva, 2019

The early inclusion of stakeholder's can be the decisive factor in winning each dynamic interaction with competitors. As discussed in the RRI framework, inclusion should occur at the early stages of innovation (Maines da Silva, Bitencourt, Iakovleva, 2019). By including stakeholders in earlier stages, it allows startups to better absorb and reflect on the feedback received, this in turn will allow for changes based on stakeholder opinion to be implemented at the testing stage and before the launch and post launch stages. After testing the innovation with the changes suggested by relevant stakeholders the service or product innovation can be ready for market. This also allows the use of other RRI tools such as anticipation at the

earlier stages of the innovation process in which contingency and foresight are used to find possible and desirable futures (Stilgoe et al. 2013). Other RRI tools such as reflection can be used on the middle stage and responsiveness in the later stages of the innovation process, this will bring the use of all four main tools described in RRI theory into the stages of innovation of the startups participating in the study (Stilgoe et al. 2013).

As shown in *Figure 18Figure 18*, in addition to stakeholders been included too late in the innovation process startups are lacking multi stakeholder inclusion. RRI theory refers to stakeholders as any group or individual that affects or is affected by an organization's goals (Maines da Silva, Bitencourt & Iakovleva, 2019). Thus, there is the need to include non-economic stakeholders at the earlier stages of the innovation process. We define non-economic stakeholders as those who have no financial interest in the company, these can include non-government organizations, politicians, community, general public, the media among others. In *Figure 19* a suggestion of a model that includes non-economic stakeholders in earlier stages of the innovation process is presented.

Figure 19: Recommended stages of stakeholder participation in the context of responsible innovation



Source: Maines Da Silva, Bitencourt & Iakovleva, 2019

As mentioned in the theory part of this thesis, the innovation process must include actors with different backgrounds that can engage in a diverse and continuous dialogue with the aim of enhancing the discussion and our knowledge (Stilgoe et al., 2013). The study has found evidence that most respondents showed stakeholder inclusion knowledge and encouragement, but these interactions are mainly based on primary/informant meetings and relations build over time. The researchers notice that a clear method to reach out to stakeholders is lacking, one of the survey respondents mentioned design thinking as the method used to manage stakeholder inclusion but most respondents were not assertive on similar methods. Scholars have argued for the inclusion of actors with different backgrounds that are able to engage in valuable dialogue (Stilgoe et al, 2013). Their inclusion allows to bring the different actors in the society that are relevant to the innovation development (Owen, 2012).

Thus, we can argue that the absorptive and adaptive capabilities shown by the companies in the study are limited by the few stakeholders invited to participate in their innovation process thus their innovation capabilities have room for improvement. Therefore, if firms are actively including multi stakeholders they might also develop more mechanisms for absorption of their insights, and they also should be able to reflect (adapt) in greater capacity to the inputs from stakeholders. The increase in the volume and inclusion of non-economic stakeholders can improve the startups innovative capability which as mentioned in the theory part is highly needed in attaining competitive advantage (Wang Ahmed, 2007). Innovation capabilities can also help in the development and implementation of new innovation configurations that can be used for technological improvements and changes of (Bell, 2009). Thus, the more stakeholder you include, the higher is you absorptive and adaptive capabilities, resulting in a higher innovative capability.

From these observations the researchers argue for the development of a structured method for stakeholder inclusion management. We tend to think that methods that are human centered and that can be implemented in different business settings are the most beneficial for the type of technology driven companies we have examined (Müller-Roterberg et al.2018, Reine, 2017; Bakic & Husgafvel, 2015). Methods such as design thinking that are currently been

used to foster innovative thinking and enhance the user experience are best equipped to adjust the company's product to new market trends (Brown T, 2008), this due to the fact that the solutions that come out of this process consider the customer and the market needs. Furthermore, a startup in the survey already uses design thinking as its go to method for management of stakeholder inclusion therefore we tend to think that the use of such methods can provide a framework for stakeholder's information and inclusion management.

We also argue for agile methodology to be more present in such companies, increasingly, facts show that companies that move toward digitalization have an edge on a rapidly changing market. Therefore, the use of agile innovation methods provides a tool to respond quickly to market changes by using customers perceptions to integrate, develop and adapt their innovation (Caimi and Noble, 2016). As previously mentioned, these facts have shown that there is a close connection between agility, innovative ability and the degree of digitization of companies (Eschberger, 2018). As mentioned, innovation processes face many challenges since they can lead to false starts and dead ends (Tidd, 2006) and often come across communication problems, changing customer needs and constant technology development (Apilo, 2007). The use of agile methods can bring more efficiency to the management of such processes by using digitalization as the driving force (Caimi and Noble, 2016).

7. Conclusion

The purpose of this thesis was to determine how stakeholder inclusion contributes to the innovation process. To achieve this, the following sub research questions were analyzed: 1. Who are the stakeholders typically invited to participate in innovation process? 2. At what stage of innovation process do stakeholders participate? 3. How does stakeholder inclusion relate to absorption and adaption of knowledge? 4. How does stakeholder inclusion relate to the innovation capability of the firm? (Maines da Silva, Bitencourt, Iakovleva, 2019). This study used a mixed methods approach in which a combination of qualitative an quantitate approach was used to analyze data. An organization was approach and agreed to conduct the research on startups that have participated in one of their programs. For the qualitative part of the study interviews were carried out and for the quantitative part a survey was sent to startups.

The findings establish that innovation is widely accepted and encouraged, and that mainly economic stakeholders are included in the startup's innovation process. The study also suggest that firms have a degree of absorptive, adaptive and innovative capabilities since they are able to reflect, absorb and adapt to some degree their innovation based on stakeholder inclusion (Wang & Ahmed, 2007), but these interactions are lacking the inclusion of non-economic stakeholders in earlier stages of the innovation process. Therefore, the reach and scope of their innovation capabilities is been hindered by the limited number of stakeholders been included and the late stages these interactions are taking place.

The main focus of the study was to analyze how RRI theory regarding stakeholder inclusion can have an impact in the development of a startups and ultimately help them to achieve a competitive advantage. In particular, it highlighted the fact that economic stakeholders have been mainly the subject of such studies. We seek to enrich the innovation management theory by contributing and extending the knowledge from the RRI perspective, specifically in relation to user perspective by studying the inclusion of non-economic stakeholders. The RRI theory calls for the inclusion of a wider set of stakeholders. The researchers aim is that this

kind of study can be considered as an aid in the development of policies that foments startups capabilities by including a wider set of stakeholders. In this sense and according to the opinion of the present researchers, instruments such as RRI not only contribute to a better startup community and better innovation but also help develop and transform the fabric of societies, specifically segments that feel neglected or forgotten by policy makers. We argue for the standardization of methods such as RRI, with the goal to provide a structure for the management of stakeholders.

In terms of contribution to theory, we have used as basis Maines da Silva, Bitencourt and Iakovleva (2019) innovation process funnel view to responsible governance and have highlighted the stages in which according to our study stakeholder inclusion is taking place and the ideal stages these interactions should be taking place. Previous studies focused on economic stakeholders and we hope to extend innovation management research by highlighting and conducting a study focusing on the inclusion of non-economic stakeholders.

Regarding implications our research has for practitioners, as mentioned, in the study was evident that stakeholders were included in the later stages of the innovation process and that this inclusion was limited in number of stakeholders since it included mostly those with economic interest in the firm. This has the dual effect of not allowing enough time to reflect and adapt to the stakeholder's needs, opinions and changes. It is also worth to point out that the results from firms that did include stakeholders in earlier stages (see Table 20) can be in the lower degree of adaptive capabilities (Wang & Ahmed, 2007), this is due to the limited number of stakeholders been included. Furthermore, the study showed the decision-making regarding stakeholder inclusion and management relies on the CEO of the companies.

Although it is somewhat expected since these are small firms, it is indicative of the reasons why not a wider pool of stakeholders is been included. Further knowledge of inclusive methods and its practical implementation earlier can help to better deal with such problems. The research was limited due to the amount of responses and time for the dissemination of the survey and some initial hurdles in terms of publication and time constrains from the organization was overcome. Our sample was drawn from a specific organization in the Oslo

region so further studies that include a wider sample and multiple organizations will be beneficial. Thus, our findings are limited in geographical terms since it is based in a particular region of Norway.

In terms of future research, conducting similar studies at the national or even regional levels can shed light on how stakeholder inclusion is managed in different regions and the similarities or differences in methods or mechanisms if any they use. We see the development of policies at the national and local level that foment the inclusion of relevant stakeholders in the innovation process as the best way to increase awareness and knowledge regarding the importance of stakeholder inclusion. Other interesting areas for further research steaming from the research results are power concentration in the decision making and how they can affect inclusion within a firm. We also see space for further research on new mechanisms for inclusion besides the ones addressed on this study. Therefore, we suggest future empirical research to be conducted on this matter in order to further develop and build upon our study's empirical findings.

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9. Appendix

Appendix 1: Interview guide

The following questionnaire is part of the master thesis: *"Stakeholder participation in the Innovation process"* and research project "Dynamic Drivers of Responsible Research and Innovation" supported by Norwegian Research Council (project number 247716/O80). We aim to collect data on how start-ups and innovative firms in the Oslo region reach out to stakeholders (general public, academia, public sector) in the development of their product/ service and what influence if any this had on their successful development. The thesis is co-written by Ramon Moreno and Marina Doderovic and supervised by Professor Tatiana Iakovleva from the University of Stavanger with the support of Oslo International Hub. The data obtained from survey is going to anonymized. If you have any question, please contact +4794252511 or emails: tatiana.a.iakovleva@uis.no, rm@businessangel.no

Interview guide

Initial questions

1. Can you tell us about the product or service you offer in your department, company or organization? Years in business, employee numbers. How was it formed? How long is the product development process? What stage is it in? Who had the idea?

Stakeholder Inclusion: Introductory questions

1. About your product/service, what do you consider as important for the user?
2. Who contributed on the early stages?
3. What are your criteria for inclusion?
4. Do you count with user's participation during the product/service development process? How important is users' contribution?

Stakeholder Inclusion: Core questions

1. Whom do you consider as your external stakeholders, can you describe them?
2. Is multi-stakeholder participation a practice / policy of the company or is this the first project that contemplates this participation?
3. Were the same stakeholders used at all stages of the product development process?

4. What method was used for these participations (interview, focus group, questionnaire, workshops)?

5. Was the same method used at all stages of the product development process?

6. Has the idea changed in relation to the initial plan based on stakeholder input? (Describe)

7. Do you consider important the participation of external stakeholders at what stage? Why?

8. Did you developed new processes or routines to manage stakeholder participation?

9. Who, from your company, is in charge to select, invite to participate and manage the information developed troughs the stakeholder participation?

Appendix 2: The survey

The Survey

The following survey is part of the master thesis: "Stakeholder participation in the Innovation process" and research project "Dynamic Drivers of Responsible Research and Innovation" supported by Norwegian Research Council (project number 247716/O80). We aim to collect data on how start-ups and innovative firms in the Oslo region reach out to stakeholders (general public, academia, public sector, civil society, customers, investors, etc) in the development of their product/ service and what influence if any this had on their successful development.

The thesis is co written by Ramon Moreno and Marina Doderovic, master candidates from the University of Stavanger supervised by Professor Tatiana Iakovleva. Data obtained from the survey will be anonymized. If you have any question, please contact tlf. 94252511.

1. What year was your business founded

2. How many employees does the business have?

- ◯ 1-5
- ◯ 5-10
- ◯ 10-20
- ◯ More than 20
- ◯ More than 50
- ◯ More than 100

3. What industry/sector does you company belong to?

4. What is the main business activity? (Please choose only one answer)

- ◯ Production
- ◯ Sale/Distribution
- ◯ Service
- ◯ Other (please specify)

5. About innovativeness in your company:

	Never	Very rarely	Rarely	Occasionally	Very frequently	Always
Management actively seeks innovative ideas	◯	◯	◯	◯	◯	◯
Innovation, based on research results, is readily accepted in our organization.	◯	◯	◯	◯	◯	◯
Innovation is readily accepted by management	◯	◯	◯	◯	◯	◯
People are penalized for new ideas that don't work	◯	◯	◯	◯	◯	◯
Innovation in our organization is encouraged	◯	◯	◯	◯	◯	◯

6.

The development of new products and services considers common stages composed of a group of activities. Idea phase refers to a very early concept without major resources committed. Detail design stage refers to development of the first prototype. Testing refers to improvement and testing of the solution. Launch stage is the first market entry with sales. Post launch stage is active presence on market, this can be up to 5 years after launch stage

What stage of development applies to your new product/service?

◯ Idea (Outline concept)

◯ Detail Design

◯ Testing

◯ Launch

◯ Post Launch (Early market entry)

7. Stakeholder inclusion is a tool that provides start-ups the ability to bring large groups of people together including city employees, non-profits, civil society organizations, legislators, community leaders and end users into the innovation process of developing their product/service.

How important were stakeholder's involvement for the innovation process? (please check all that apply)

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential users/customers/partners were involved in the discussions about our solution	◯	◯	◯	◯	◯	◯
Potential users/customers/partners were actively involved into development process of our solution	◯	◯	◯	◯	◯	◯
Other stakeholders (filed experts, researchers, city employees, non-profits, civil society, organizations, legislators, community leaders) were involved in the discussions about our solution	◯	◯	◯	◯	◯	◯
Other stakeholders (filed experts, researchers, city employees, non-profits, civil society organizations, legislators, community leaders) were involved in the discussions about our solution	◯	◯	◯	◯	◯	◯

Other (please specify)

8. How important were stakeholder's involvement for IDEA stage of the innovation process? (early concept without major resources committed)

Please check all that apply

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential/existing users, customer	◯	◯	◯	◯	◯	◯
Suppliers or distributors	◯	◯	◯	◯	◯	◯
Investors	◯	◯	◯	◯	◯	◯
Research and development organizations (scientists)	◯	◯	◯	◯	◯	◯
Oslo international hub members	◯	◯	◯	◯	◯	◯
Industrial clusters as organization	◯	◯	◯	◯	◯	◯
Chamber of commerce as organization	◯	◯	◯	◯	◯	◯
Municipalities	◯	◯	◯	◯	◯	◯
Politicians	◯	◯	◯	◯	◯	◯
Common people	◯	◯	◯	◯	◯	◯
Community leaders	◯	◯	◯	◯	◯	◯
NGO	◯	◯	◯	◯	◯	◯

Other (please specify)

9. How important were stakeholder's involvement for DETAIL DESIGN stage of the innovation process? (development of the first prototype)

Please check all that apply

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential/existing users, customer	◯	◯	◯	◯	◯	◯
Suppliers or distributors	◯	◯	◯	◯	◯	◯
Investors	◯	◯	◯	◯	◯	◯
Research and development organizations (scientists)	◯	◯	◯	◯	◯	◯
Oslo international hub members	◯	◯	◯	◯	◯	◯
Industrial clusters as organization	◯	◯	◯	◯	◯	◯
Chamber of commerce as organization	◯	◯	◯	◯	◯	◯
Municipalities	◯	◯	◯	◯	◯	◯
Politicians	◯	◯	◯	◯	◯	◯
Common people	◯	◯	◯	◯	◯	◯
Community leaders	◯	◯	◯	◯	◯	◯
NGO	◯	◯	◯	◯	◯	◯

Other (please specify)

10. How important were stakeholder's involvement for TESTING stage of the innovation process? (improvement of the first prototype and active testing of the solution).

Please check all that apply

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential/existing users, customer	◯	◯	◯	◯	◯	◯
Suppliers or distributors	◯	◯	◯	◯	◯	◯
Investors	◯	◯	◯	◯	◯	◯
Research and development organizations (scientists)	◯	◯	◯	◯	◯	◯
Oslo international hub members	◯	◯	◯	◯	◯	◯
Industrial clusters as organization	◯	◯	◯	◯	◯	◯
Chamber of commerce as organization	◯	◯	◯	◯	◯	◯
Municipalities	◯	◯	◯	◯	◯	◯
Politicians	◯	◯	◯	◯	◯	◯
Common people	◯	◯	◯	◯	◯	◯
Community leaders	◯	◯	◯	◯	◯	◯
NGO	◯	◯	◯	◯	◯	◯

Other (please specify)

11. How important were stakeholder's involvement for LAUNCH stage of the innovation process? (the first market entry with sales).

Please check all that apply

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential/existing users, customer	◯	◯	◯	◯	◯	◯
Suppliers or distributors	◯	◯	◯	◯	◯	◯
Investors	◯	◯	◯	◯	◯	◯
Research and development organizations (scientists)	◯	◯	◯	◯	◯	◯
Oslo international hub members	◯	◯	◯	◯	◯	◯
Industrial clusters as organization	◯	◯	◯	◯	◯	◯
Chamber of commerce as organization	◯	◯	◯	◯	◯	◯
Municipalities	◯	◯	◯	◯	◯	◯
Politicians	◯	◯	◯	◯	◯	◯
Common people	◯	◯	◯	◯	◯	◯
Community leaders	◯	◯	◯	◯	◯	◯
NGO	◯	◯	◯	◯	◯	◯

Other (please specify)

12. How important were stakeholder's involvement for POST- LAUNCH stage of the innovation process? (active presence on market, can be up to 5 years after launch stage) Please check all that apply

	They did not participate	Not very important	Little important	Somewhat important	Important	Very important
Potential/existing users, customer	◯	◯	◯	◯	◯	◯
Suppliers or distributors	◯	◯	◯	◯	◯	◯
Investors	◯	◯	◯	◯	◯	◯
Research and development organizations (scientists)	◯	◯	◯	◯	◯	◯
Oslo international hub members	◯	◯	◯	◯	◯	◯
Industrial clusters as organization	◯	◯	◯	◯	◯	◯
Chamber of commerce as organization	◯	◯	◯	◯	◯	◯
Municipalities	◯	◯	◯	◯	◯	◯
Politicians	◯	◯	◯	◯	◯	◯
Common people	◯	◯	◯	◯	◯	◯
Community leaders	◯	◯	◯	◯	◯	◯
NGO	◯	◯	◯	◯	◯	◯

Other (please specify)

13. We used the following tools for involving external stakeholders in innovation process:

	Not used at all	Rarely used	Used from time to time	Often used	Used most of the time
Individual meetings	◯	◯	◯	◯	◯
Workshops	◯	◯	◯	◯	◯
Collective dialogue session	◯	◯	◯	◯	◯
Design thinking process	◯	◯	◯	◯	◯
Informal interactions (social events etc)	◯	◯	◯	◯	◯
Surveys	◯	◯	◯	◯	◯
Feedbacks through social media	◯	◯	◯	◯	◯
Focus group	◯	◯	◯	◯	◯
Discussion with groups of experts	◯	◯	◯	◯	◯

Other (please specify)

14. How do you select the stakeholders?

- ☐ Based on the owner's network
- ☐ Based on another stakeholders' network
- ☐ Based on the level of contribution, considering who might share same views of the innovation in question (e.g., green economy, digitalization)
- ☐ Based on the level of contribution, considering who might be against the innovation in question (e.g. Greenpeace and oil companies)
- ☐ Other (please specify)

15. Who, from your company, is in charge to select, invite to participate and manage the information developed troughs the stakeholder participation?

- ◯ CEO
- ◯ Design manager
- ◯ External fellow
- ◯ Business developer
- ◯ Other (please specify)
- ◯ HR manager
- ◯ Marketing person
- ◯ Everyone

16. Please, check all that apply

	Totally disagree	Mostly disagree	Neither agree or disagree	Partly agree	Fully agree
We have routines (repeated procedures) to get stakeholders opinion and to involve them into the innovation process (surveys, digital feedback, face-to face feedback, other means)	◯	◯	◯	◯	◯
We ensure that all employees are aware of the feedback from users/customers/partners and other stakeholders	◯	◯	◯	◯	◯
It is a good established routine to discuss user/ stakeholder feedbacks and possible improvements of the solution	◯	◯	◯	◯	◯
We often get new ideas after interaction with users/stakeholders	◯	◯	◯	◯	◯

17. Please, check all that apply

	Totally disagree	Mostly disagree	Neither agree or disagree	Partly agree	Fully Agree
Our solution was considerably modified during the idea and design phase	◯	◯	◯	◯	◯
Our solution was considerably modified during the test phase	◯	◯	◯	◯	◯
Our solution was considerably modified during the launch and post-launch phase	◯	◯	◯	◯	◯
Our organizational structure (number of employees, their competence, member of advisory board) have changed during the innovation process	◯	◯	◯	◯	◯
We engaged with new partners and distributors during the innovation process	◯	◯	◯	◯	◯
We managed to provide speedy response to market change	◯	◯	◯	◯	◯
We have considerably improved our competences during the innovation process	◯	◯	◯	◯	◯

18. We would like to contact your business again in two years time. If you are positive about that, please provide your email address or telephone number, and name. many thanks!!