



UHASSELT

KNOWLEDGE IN ACTION

Faculty of Business Economics

Master of Management

Master's thesis

Ideas of customers during a crisis: can companies benefit from it?

Celien Brosens

Thesis presented in fulfillment of the requirements for the degree of Master of Management, specialization Strategy and Innovation Management

SUPERVISOR :

dr. Relinde COLEN



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Covid-19 disclaimer

This master thesis was written during the COVID-19 crisis in 2020-2021. This global health crisis has had an impact on the process. Especially on the research activities and the research results that are at the basis of this thesis. There was an impact on:

The interviews. Because of this pandemic, all interviews had to be taken via digital channels. In this way it is different than face-to-face. During interviews, you want to make the respondents comfortable so they can tell everything they want. I also believe that when taking interviews via a digital meeting, interviewees will tend to be more to the point and give shorter answers. This will also affect the results of this study.

Furthermore, because of the crisis, it has a major impact on the way of writing. The feedback sessions were mostly via mail and in google drive. However, when one could meet in person with each other, you can ask more questions.

Next, the crisis had a positive impact on the determination of my research. Because of the pandemic, the opportunity arise to get to know more about this topic.

Preface

During the past 10 months, I've got the opportunity to write a master dissertation which is the last step in graduating.

The topic of my study was chosen based on the current COVID-19 situation. Together with my mentor (Mrs. Colen), we brainstormed to find a topic that includes innovation and customers. Furthermore, the reason to include the crisis, was because I wanted to learn more about it and took this as the perfect opportunity. With this study, I hope it can contribute to the literature and help companies when a next crisis comes along.

Besides, I want to thank every interviewee that actively participated in this master dissertation. I've got the opportunity to listen to all very interesting people with different perspectives.

I also want to thank Mrs. Colen for her insights and support. She tried to motivate and challenge me during the whole process.

Furthermore, I would like to thank my boyfriend Yannick Eraets, for his support and pushing me the extra mile during the difficult times.

And finally, I wanted to thank my buddies, my fellow students. During the process of writing a master dissertation, we got the opportunity to show parts of our research to other students. They could give feedback and inspiration on our study. These meetings with students were the so-called buddy meetings and were very helpful.

Summary

Since the beginning of 2020, a pandemic has drastically changed our lives (Pantano, Pizzi, Scarpi and Dennis, 2020). Governments have imposed restrictions such as quarantine, in order to keep us physically safe and decrease the number of people in hospitals (Vellinga, Mellotte, Mealy, Staines, O'Connor, Brychkova and d'Aquin, 2021). Some companies transformed their production from alcohol to hand sanitizers (Pantano et al., 2020). However, despite some efforts, a study of Economic Risk Management Group estimated on June 29th (2020) that the revenue of Belgian organizations is 17% below average since the pandemic. Because, during a crisis, industries and markets may experience rapid changes and increased environmental uncertainty (Osiyevskyy, Shirokova and Ritala, 2020), companies must consider how to do business (Simon, 2009). A crisis is characterized by four elements, namely: large impact, uncertainty, threat and time pressure.

While, there is an overload of evidence in the literature about the importance of involving customers in generating innovative ideas (Witell, Kristensson, Gustafsson and Löfgren, 2010), there is no literature found that states whether customers are an important source within crises. This study investigates whether the involvement of customers in the innovation process might be a possible solution during a crisis. Therefore, we will provide an answer to the research question: "*Can companies use customer ideas to their advantage during a time of crisis?*" In order to solve this question, the topic is divided into 2 sub questions: (I) "*Are ideas needed in a time of crisis?*" and (II) "*Can customers generate these ideas?*". Besides an extended review of the literature, this thesis will also include a field study where 8 respondents are interviewed.

Based on the findings of the literature, we are able to answer the research question and sub question to the following extent. Starting off with the sub questions. On the first sub question: "*Are ideas needed in time of crisis?*", we learned that ideas are able to solve problems (Dean, Hender, Rodgers and Santanen, 2006), which may be faced by companies during a crisis.

The second sub question is: "*Can customers generate these ideas?*". Customers can generate a lot of creative ideas (Suominen Jussila, Aramo-Immonen and Koskinen 2015). Which is also needed during the first stage of the idea process (idea generation phase). When customers generate ideas, they are typically more novel and have a higher score on market potential compared to professionals (Poetz and Schreier, 2012). Although, novel ideas have a higher chance of getting rejected as they are seen as being risky (Skerlavaj, Cerne and Dysvik, 2014). This is a negative effect for the company because novel ideas are harder to implement. Firms need resources like time, energy and support for implementation (Skerlavaj et al., 2014). But in a crisis, there is time pressure and firms may not have much time. So this can lead to a negative impact on the creativity of customers (Khedhaouria, Montani and Thurik, 2017). On the other hand, in a crisis, customers' preferences are likely to change (Simon, 2009). In this, way, customer involvement within the innovation process becomes even more important as they can be a great insight into their needs and wants. So, based on the research question: "*Can companies use customer ideas to their advantage during a time of crisis?*", it is possible. However, companies must understand where in the idea process the involvement of customers takes the company to a higher level and in which situation the company can benefit from its strengths.

After doing interviews with 8 respondents, whereby 3 respondents working in a consultant company, 2 in the food sector and 3 specialized in hiring and selling tents. We found some interesting insights. One of the main key elements that we found was that not every company innovates in order to survive a crisis. Some companies such as the tent industry, innovates in order to increase their performances when the pandemic is over. This is a very important contribution to crisis literature as it shows that crisis has a higher impact on the type of sector as we first thought. Also it would be interesting to do more research about it, see if other sectors such as: tourism, hotel and restaurants and potentially IT.

Furthermore we saw a very interesting pattern of 3 respondents. Those interviewees, which had the highest success of their innovation during this crisis, had some things in common. First, they regularly do interviews or sales talks with their customers to find out their needs and wishes. Second, they all mentioned to experience a change in the behavior or preferences of their customers during this crisis. And third, during this crisis, none of them did a double check with customers, to find out if their innovations would still match the new needs of customers. Moreover, the result was that 3 of them entered a blue ocean. So for further research it would be interesting to find out if by entering a blue ocean during a crisis, the criteria based on market potential, are they less important? Even knowing that customer behavior and preferences are changed? Or do all 3 companies had just luck?

Also, during the interviews and field study, it has been shown that ideas are very important during a crisis. It turns out that even a bad idea can lead to a good idea, after evaluation. Moreover, a bad idea can lead to higher success than having no idea at all. So, to answer the research question: "*Can companies use customer ideas to their advantage in times of crisis*", five out of eight respondents believe that involving customers may benefit in times of a crisis. Although it is remarkable that almost every idea of the interviewees are coming from internally. Moreover, none of them involved customers in a previous crisis. But they all mentioned to involve customers more in a future crisis, except for one interviewee.

To conclude, the importance of this study can be shown by the fact that this research topic is very recent (corona crisis), yet it is still relevant, because firms can still adapt. Furthermore, a crisis is not a once in a lifetime experience, which makes it remarkably interesting since there was no valid answer to this research question yet. One of the main limitations of this study is that companies do not show publicly if they use the ideas from customers. It would be interesting to do a study with companies which involved customers for ideas during a previous crisis and the current crisis. Would there be much differences? Another recommendation would be to find out when a crisis is globally spread, the involvement of customers becomes even more important or not.

Finally, some managerial implications is that managers must be more aware of the impact a crisis can have on a company. Not only does the environment of the company change, it also might change for customers. Therefore, they should implement a crisis team which includes external stakeholders including customers. Next, decide for your own company which kind of criteria and methods fits with your strategy before generating new ideas.

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1. Introduction

Since the beginning of 2020, a pandemic has drastically changed our lives (Pantano, Pizzi, Scarpi and Dennis, 2020). The pandemic impacts almost every individual, business, government and institution. Waiting times and social distancing are now tolerated (Pantano, et al., 2020). Some people have experienced a lockdown. Others, like traditional spirits and alcohol producers, transformed the production to hand sanitizers to be distributed among hospital workers (Pantano et al., 2020). Local small businesses which are allowed to stay open, have extended their product lines. The decrease of tourism (The World Tourism Organization, UNWTO, 2020) and emergency purchasing situations are all part of it (Pantano et al., 2020). Since WWII, the world has not experienced such severe restrictions on the freedom of individuals as those imposed by several governments. These measurements have affected the everyday life of consumers and businesses (Song and Zhou, 2020). The authors estimate that the GDP growth of most countries will decline by 3-5% in 2020 in a mild lockdown of 1,5 months (Pantano et al., 2020). According to studies of the Economic Risk Management Group (29 June 2020), they estimated that the revenue of Belgian organizations is 17% below average since the pandemic.

Although there is an overload of evidence in the literature about the importance of involving customers to generate innovative ideas (Witell, Kristensson, Gustafsson and Löfgren, 2011), there is no literature found that states whether customers are an important source within crises. On the other hand, industries and markets experience rapid changes and increased environmental uncertainty during times of crisis pushing firms to reconsider their strategic behavior to cope with the crisis (Osiyevskyy, Shirokova and Ritala, 2020). This leads to a new situation where companies must consider how to do business (Simon, 2009). So, a possible solution might be the engagement of customers in the innovation process during a crisis.

This study will provide an answer to the research question: "Can companies use customer ideas to their advantage during a time of crisis?". To solve this question, the topic is divided into 2 sub questions. The first question is: "*Are ideas needed in a time of crises?*" In this sub-question, the study will investigate (I) whether firms need more, different or a faster idea generation for new products or services. Next, we search for (II) what factors are important in the generation of ideas. At last, we will search for (III) criteria that determine innovative ideas.

The second question is: "*Can customers generate these ideas?*". To answer this question, there needs to be an in-depth analysis about: (I) The advantages and disadvantages of involving customers. (II) Ideas and customer involvement in times of crisis. Which includes via what possible methods companies can receive ideas.

We will do this by starting off with a definition of a crisis, then we will dive deeper into customer behavior in times of crisis. Next, we will discuss the importance of ideas, and how the process of ideas might work. Furthermore, we will focus on the involvement of customers, what the advantages and disadvantages are and via which method companies may use them.

Next, the methodology of this research will be qualitative research. There will be 8 people interviewed with a semi-structured interview. The selection of these people will be based on convenience sampling. One of the key elements found in this study was that not every company innovates in order to survive. Some companies innovate to increase their performance to operate better when the pandemic is over.

From the results of this study we can assume the importance of future research analyzing these gaps. It is important to invest more research into this topic to help companies, which have been struggling. There are studies indicating that innovation in such dire times is even more crucial for firms to survive in the long run than in periods of stability (Roper and Turner, 2020).

2. What is a crisis?

In order to get a clear and deeper understanding of what a crisis is, there will be a discussion of four definitions. In this discussion, the common factors stated in those definitions will be discussed. Afterwards, these common factors will be used in the rest of the study to find a link between the different topics.

According to Ma and Liang (2018, p375), a crisis is: "a major occurrence with potentially negative outcomes affecting an organization, company, or industry, as well as its publics, products, services, or good name. It is an urgent situation in which all group members face a common threat".

King (2002, p237), defines it more like an unplanned event: "A crisis is an unplanned event that has the potential of dismantling the internal and external structure of an organization. A crisis may affect not only the employees and other members internal of the organization, but also the key publics and stakeholders external to the organization".

Furthermore, Pearson and Clair (1998, p60), define a crisis in the organizational context as "a low probability, high impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effects and means of resolution as well as by a belief that decisions must be made swiftly."

A crisis can expand rapidly as it comes in many shapes and forms. It also may affect the legitimacy of any organization. For that reason, companies need appropriate structures to focus on crisis management. Leaders have an impact on how they communicate this to all stakeholders (including customers). So, the earlier the situation is identified as a crisis, the higher the chance is to prevent the crisis (Silveira dos Santos, Bandeira-de-Mello and Castro de Almeida Cunha, 2016, p97).

These four definitions have some key factors in common. First, the urgency of the situation results in high "time pressure". Silveira dos Santos et al. (2016) mention that speed can have an influence on a crisis . Second, the "threat" faced by the company or even industry (Ma and Liang, 2018; Pearson and Clair, 1998). Next, Pearson and Clair (1998) discuss that in a time of crisis there may be ambiguity. This leads to things being unclear, because no one knows exactly how the situation is going to end. In this study, we will call the third element "uncertainty". Finally, a crisis is defined by the "large impact" it has, which is explicitly mentioned by Pearson and Clair (1986). Below, Figure 1 shows the key elements of a crisis, which will also be used in next topics in order to link different topics.



Figure 1: Key elements that characterize a crisis.

Now that we have clarified what a crisis is, it is interesting to know more about the course of a crisis. Generally, a crisis consists of three major phases, namely: the incubation period, the critical period and the aftermath.

- The incubation period: is the first stage and is also called the pre-crisis stage or prodromal crisis stage. During this period of time, the organization is having a stable environment, without any danger or threats identified. This stage can take months, years or even decades. Silveira dos Santos (et al., 2016) also calls this the warning stage as leaders have the opportunity to prevent the crisis.
- The critical period: This is the second stage and starts with a triggering event that leads to a crisis. This period of time is usually much briefer and can even take a couple of minutes! When people have a crisis in mind, this is often the stage they think of. Additionally, this stage is very crucial as all the negative aspects of a crisis happen all at once. The time is limited, information flows faster and more intensely. Management must take decisions very quickly and effectively. Also, all stakeholders become involved, and the options of communication channels are reduced. The authors mention that the overall most challenging factor in this period is the speed and intensity of a crisis. Looking back at the key elements of a crisis, in this study speed is discussed as time pressure and intensity is discussed as a large impact.
- The aftermath: the last stage stands for the period of recovery. Here, the organization tries to respond to the crisis. This stage ends when the crisis is completely solved (Silveira dos Santos et al., 2016).

Leaders may counter on these different stages of crisis (incubation period, critical period and aftermath), which are previously discussed. Leaders can do this by tasks of crisis management. They

consist of: sensemaking, decision making, meaning making, terminating and finally, learning. They are discussed one by one, below (Silveira dos Santos et al., 2016).

- Sensemaking: It is meant that the leaders must recognize signals that can affect the company.
- Decision making: In times of crisis, leaders have to make various decisions as it brings multiple issues along with it.
- Meaning making: This task is about communicating with stakeholders in order that they know what is going on and can protect their interests. It has been expected from leaders to reduce uncertainty and offer authority.
- Termination: It is the task of a leader to end the crisis, to hopefully insure a further existence of the company.
- Learning: Leaders learn lessons from crises and they will even get some experience. This may lead to potential lessons for continuous planning and training for further crises. (Silveira dos Santos et al., 2016).

Just like a crisis, crisis management consists of multiple stages, such as: crisis prevention, response stage and recovery stage. (Silveira dos Santos et al., 2016).

- The crisis prevention: This occurs in the first stage of the crisis which is described above (the incubation period). When the organization tries to identify signals, they also must act upon them in order to solve the crisis before it has the ability to occur.
- The response stage: At this moment of time, organizations focus to minimize the damage that it makes to the firm.
- The recovery stage: the last stage, companies must learn from the situation and try to implement the needed changes it must have in order to survive a next crisis (Silveira dos Santos et al., 2016). Because the sad fact is that events like crises, can take many forms and co-occur or multiply in our lives (Barnes, Magnus, Scribner, Krallman and Guidice, 2020).

Despite all the preparations that authors Silveira dos Santos et al. (2016) suggest, it is quite impossible to prepare your company for all accidents (King, 2002). Overall, organizations tend to ensure stability and efficiency as they grow. But, in times of crisis, it sheds light on problem areas. Problems that might have been ignored in the past. When a crisis hits, companies are confronted to face the truth about all the processes. Although, sometimes the solution is staring at us all along (Clark, 2020).

A leader has the responsibility to overcome four key factors that might have an influence on the crisis. These factors are: crisis types, crisis mechanism, crisis systems and crisis stakeholders (Silveira dos Santos et al., 2016). Because the main elements fall out of the scope of this thesis, there will be a detailed discussion on crisis stakeholders.

- Crisis stakeholders: The stakeholders are all the various parties, institutions, societies and even customers that are affected by the large impact of a crisis (Silveira dos Santos et al., 2016). According to King (2002), in a crisis, an organization must not only communicate to his stakeholders, but also communicate to the general public. The best way to counter this is by launching a crisis management team of employees that possesses the right communication and management skills. It gives the opportunity to exchange ideas inside

and outside the borders of an organization (King, 2002). In reality, most stakeholders are often forgotten in times of crises, especially when technical facts must be discussed. There is little to no explanation provided to the stakeholders (Stephens, Callish Malone and Bailey, 2005). Although, the crisis may also affect them. Stakeholders can play a crucial role during a crisis. Stakeholders can help to protect the positive reputation of a company during a crisis, when there is a strong relationship based on two-way communication (Foget Johansen, Johansen and Weckesser, 2016).

2.1 Customer behavior in times of crisis

After the explanation of involving stakeholders during a crisis, the focus will now be on customer behavior in times of crisis.

Customers are very important in daily life and cannot be ignored. During a time of crisis, the behavior of customers might change. Which changes will be temporary or permanent is not sure (Simon, 2009). In a research of Barnes et al. (2020) customers were found to switch service providers even when they reported high levels of satisfaction. So, customers do not necessarily behave as we would predict (Barnes et al., 2020), not even during a normal / stable situation. One of the elements that might influence customer behavior is fear. This fear may be of the future and is quite difficult for companies to overcome this (Simon, 2009).

Besides changing behavior, the customer preferences can also change in turbulent situations. But it may open up new opportunities for companies that offer the right solution. It may even help to find an outcome of the situation (Simon, 2009).

Customers sense marketplace uncertainty (Barnes et al., 2020). No one wants to buy a product and learn shortly after the purchase that the supplier is bankrupt (Simon, 2009). Also, the change in time preference might change. There is a possibility that customers prefer short-term over long-term purchases. This can also be seen by investors. They avoid taking risks during turbulent times (Simon, 2009). Also, depending on the type of crisis, emotions such as joy and surprise are more difficult to obtain from customers during times of crisis (Barnes et al., 2020). The findings of Barnes' et al. (2020) study shows that companies must put more focus on "*eudaimonic needs*". These are needs based on happiness and welfare.

According to Diebner, Silliman and Ungerman (2020), if one would like to maintain a strong customer relationship in times of a crisis, rapid research to understand the changing dynamics is required. Also new pain points as well as agile innovation to address the needs of the customers.

2.2 Customer behavior during corona

A crisis such as corona, tends to expose the weakest parts of the economy and society (Song and Zhou, 2020). Now, more than ever, customers need extra information, guidance and support to navigate (Diebner et al., 2020). They want a resource they can trust and make them feel safe when things seem uncertain (Diebner et al., 2020). The reason for extra guidance is because we actually have not experienced a pandemic to that extent (Caparros and Finus, 2020). The last comparable pandemic was the Spanish flu dating back hundreds of years. During the last couple of years, we experienced some other diseases such as: Sars17 and Ebola. But they were quite local and not spread

across the globe (Caparros and Finus, 2020). In this way, there was a lot of uncertainty because no one knew what would happen and how long it would take. For that reason governments imposed restrictions like a quarantine in order to keep us physically safe and to decrease the number of people in hospitals (Vellinga, Mellotte, Mealy, Staines, O'Connor, Brychkova and d'Aquin, 2021).

According to Barnes et al. (2020), insights from the current pandemic suggests that customers are more likely to respond when organizations fulfill customers' needs that include: trust, control, understanding and belonging.

On the other hand, companies that act quickly and innovate in their delivery model to help customers to navigate safely during the pandemic, will establish a strong advantage (Diebner et al., 2020). By care, creative thinking and new tools, customers' needs can be addressed today and forge stronger ties after the crisis (Diebner et al., 2020). Important is the sooner that firms can fulfill the new customer needs during a crisis, the better off they both will be (Diebner et al., 2020).

2.3 Are ideas needed in times of crisis?

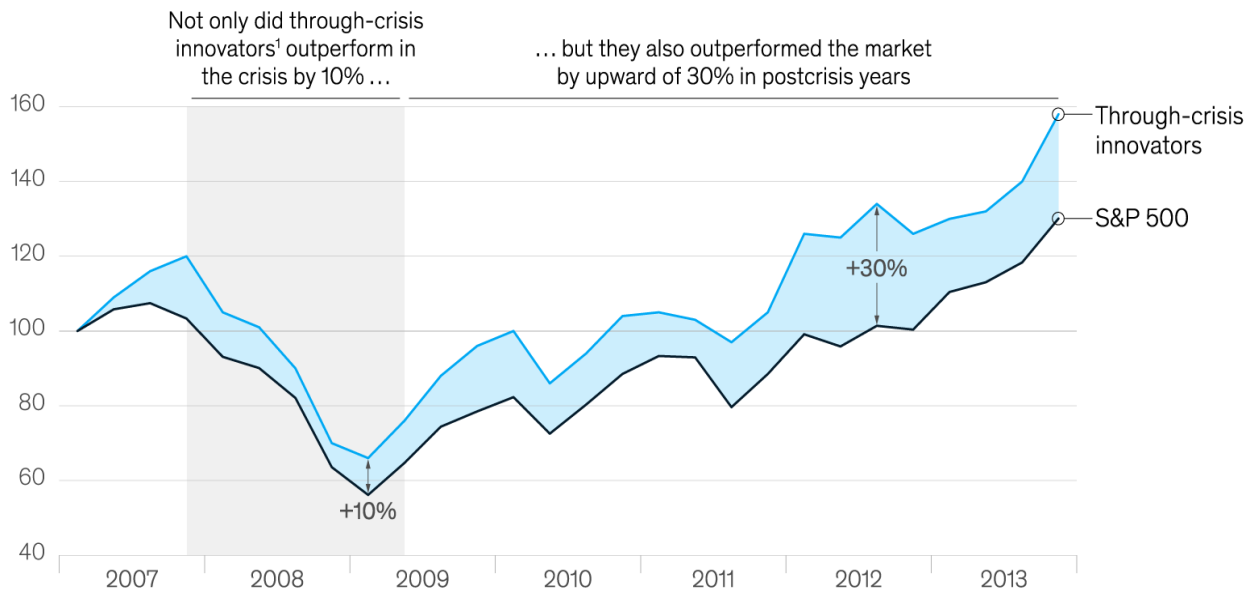
Since there is no literature on whether ideas are needed in times of crisis, this topic will first discuss the importance of innovation for profitability in general. Afterwards, there will be a link with the crisis. Generating ideas is the first step to innovate. According to Björk and Magnussen (2009), the first step is a particularly important phase. Here, the ideas have a high impact on the success but also on the costs of innovation.

When looking back at the current crisis so far, there is no doubt that everyone - governments, people, companies - is learning. This has resulted in several innovations, such as new drugs and medical devices, improved healthcare processes, breakthroughs in manufacturing and supply chain and new collaboration techniques (Clark, 2020). For example some companies focused more on additive manufacturing since the pandemic. 3D printers which are used to print airplane parts can now be used to produce respiratory ventilators (Fretty, 2020).

Moreover, the role of innovation during a crisis is important. According to a study of Bar Am, Furstenhal, Jorge and Roth (2020), innovation during hard times is very crucial. In past crises, companies that invested in innovation delivered more growth and performance. Companies that maintained their innovation process after the crisis of 2009, emerged stronger (30%) than the average market. They continued to deliver growth for the next three to five years. The graph can be found below as figure 2.

History suggests that companies that invest in innovation through a crisis outperform peers during the recovery.

Normalized market capitalization, index (Q1 2007 = 100)



¹Identified as companies on the *Fast Company* World's 50 Most Innovative Companies list for ≥ 2 years through a crisis, normalized to 2007.

McKinsey
& Company

Figure 2: Innovation through the financial crisis. (Bar Am, et al., 2020).

In crises, companies have to be creative in order to solve problems or to develop creative and innovative products that require both originality and effectiveness (Hao, Ku, Liu, Hu, Bodner, Grabner and Fink, 2016).

Empirical studies show that innovative firms show higher profits, higher market value, better credit ratings, higher market share and higher probabilities of survival in the market (Foss, Laursen and Pedersen, 2011). Especially the latter might be beneficial in times of crisis. However, despite many efforts to introduce new products, they still failed (Frederiksen and Knudsen, 2017). In this regard, selecting ideas that have a higher likelihood of delivering future performance can reduce the risk of failing. Also, it focuses on the development efforts and enhances competitiveness by enabling the firm to provide faster market delivery of desired products (Frederiksen and Knudsen, 2017).

A crisis is a sort of adrenaline kick for companies to innovate (Bar Am et al., 2020). But in order to innovate, they need ideas. These ideas can come from well-known sources, such as: universities, governments, firm's research and development departments and individual inventors. On the other hand, ideas can also come from: suppliers, employees and from customers (Björk and Magnusson, 2009).

Today, businesses must depend on the ability to develop new products and services for highly complex and competitive markets in order to survive, grow and ensure long-term competitiveness (Björk and Magnusson, 2009). In such an environment, firms should consider new approaches of innovation (Papageorgiou, Efstathiades and Milikouri, 2017). Without innovation, there would be no new products, new services or new ways to conduct business. This would lead to a situation whereby most of the organizations would continue to do the same old things in the same old ways (Milic, 2013).

So, during a crisis, companies can face some difficulties. In chapter 2.0 "what is a crisis", one key element that was discussed was threat. This threat may indicate that a problem is coming or is already there. The ultimate goal of an idea is to solve a problem (Dean, Hender, Rodgers and Santanen, 2006). That is why companies need ideas during a time of crisis in order to survive.

3. Idea process

In this topic, the idea process will be discussed. In the literature, different names are used to describe this process such as: innovation process, ideation process, idea generation and idea journey. However, in this study the term idea process will be used to clear out any confusion. The emphasis in this study will be especially on the first and second phase and will be explained in detail. The last phase will be discussed briefly. After the first two phases, there will be a link with how ideas must be in times of a crisis.

The innovation process has distinct phases and is more than just a process of research and development. Also, ideas are not just a sole ingredient of innovation, they are important because they are crucial to innovation (Frederiksen and Knudsen, 2017). In the innovation process, firms transform ideas into new or improved products, services or processes (Li, Kankanhalli and Kim, 2016).

The process can be called 'idea journey' (Perry-Smith and Mannucci, 2017). In the literature this process may exist of 3 to 4 phases. Suominen, Jussila, Aramo-Immonen and Koskinen (2015) explains three phases: idea generation, structured methodology and commercialization. Perry-Smith and Mannucci (2017) explain 4 phases, namely: idea generation, elaboration, championing and implementation. In the literature, the first phase (idea generation phase) and the last phase (implementation phase) are often discussed under the same names. The second phase may have a different name as: selection phase, screening phase (Frederiksen and Knudsen, 2017). In this study, the process will consist of 3 phases and are defined as: idea generation phase, idea selection phase and implementation phase. Below, figure 3 shows the process with each phase, the goal is to always start the process with the idea generation and to end with the idea implementation.

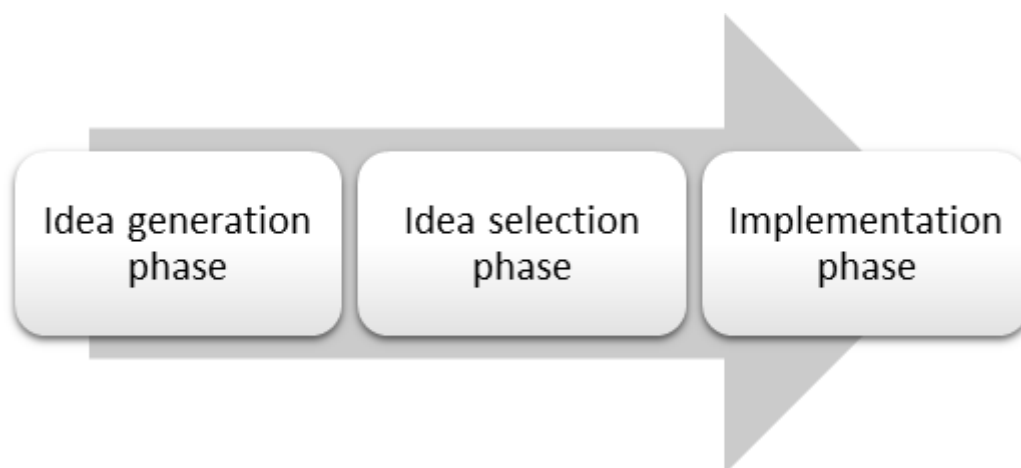


Figure 3: The idea process.

3.1 Idea generation phase

In the idea generation phase, activities such as generating ideas are performed (Veselaj and Torfason, 2019).

To get more ideas, firms can expand their environment as ideas can come from different sources (Veselaj and Torfason, 2019). To capture the benefits of being innovative, firms increasingly attempt to improve their innovation capacity by tapping into sources of external knowledge (Bogers, Chesbrough and Moedas, 2018). As Suominen et al. (2015) put it: "The best way to have a good idea is to have lots of ideas".

According to Suominen et al. (2015), assume that problem solving is a part of innovation. The reason is that idea generation and implementation of change never happen without complexity. They say that the generation and development of novel ideas happens in the early stages of the innovation process.

Earlier research suggests that the use of formal evaluation systems are especially relevant in the front end (Martinsuo and Poskela, 2011). It, thus, takes place before decisions. Formal evaluation is favored to enable the comparison of projects with one another, to provide a fair evaluation process for idea generators, and to supply consistent knowledge to the decision makers. Also, evaluating ideas, provides consistent knowledge about alternatives (Martinsuo and Poskela, 2011). Finally, Perry-Smith and Mannucci (2017), suggest that creators need constructive feedback to help them identify ways to improve and expand ideas.

3.1.1 Creativity

McAdam and McClelland (2002), define innovation as the implementation of the results of creativity. Also, Girotra, Terwiesch and Ulrich (2010), describes that creativity is considered as part of the idea generation phase.

In the literature the link between creativity and idea generation is well-known. They even consider creativity as an element of competitive advantage. According to Wöhler and Reinhardt (2020), creativity is defined as the generation of novel and useful ideas. It describes creativity as a fundamental precondition for innovation. Creativity has been commonly applied in the different stages of the innovation processes but particularly in the idea generation stage. All creative ideas originate from the human mind. In order for the ideas to develop one needs a systematic, yet human touch (Suominen et al., 2015). Ideas can be generated either by stimulating intuition or by using a systematic problem-solving approach (Martinsuo and Poskela, 2011). Also Wöhler and Reinhardt, (2020), mention the human characteristic of creativity. They write that it includes various creative thinking skills, task motivation and expertise. Also they mention the connection between an individual's creativity and organizational innovation. Suominen et al. (2015) believe that the work environment impacts creativity and creativity feeds organizational innovation.

However, McAdam and McClelland (2002) believe that creativity is about divergent thinking and innovation is more about convergent thinking. This means that, when people think convergently, they focus on coming up with a single and established answer to a problem. Here, the focus will be on using logic. On the other hand, divergent thinking is more about looking at multiple possibilities to a problem while any judgement is deferred. Hence, the focus will be on imagination and creativity (McAdam and McClelland, 2002). In this way, during the idea generation phase creativity and thus divergent thinking is required.

Organizations use creativity in different ways. Ford, Hasbro, Tesco, Verizon and Qualcomm used hackathons. IBM, General Motors, Marriott, SAP, Toshiba and GE have invested in design thinking to generate new ideas. Nordstrom, Bosch, GE, P&G and Coca-Cola have implemented lean startup programs. Other organizations such as: Lego, Samsung, Lilly, Cisco used open source innovation for new ideas (O'Reilly and Binns, 2019).

In order to solve problems in a creative way, it requires first a pool of ideas which is generated by a company (Girotra et al., 2010).

3.2 Idea selection phase

In the second phase, product ideas are screened in order to establish potential for further development (Frederiksen and Knudsen, 2017). Companies must effectively screen ideas before starting the development, as it can prevent risks of investing a lot of money in poor product concepts (Martinsuo and Poskela, 2011). According to Girotra et al. (2010), companies need to evaluate and select ideas in order to solve problems in a creative way.

3.2.1 Criteria

In previous topics, the importance of ideas is written down. Ideas are needed in order to innovate and to solve problems. However, the literature debates that the kind of ideas are company specific (McAdam and McClelland, 2002). Choosing the right idea is very important for companies (Martinsuo and Poskela, 2011). Herefore, they need to evaluate which idea has potential. So in order to avoid falling short, the evaluation of an idea must be a separate activity from idea generation (McAdam and McClelland, 2002). In order to evaluate ideas, and on which criteria they must be based is extensively discussed below.

These criteria are: creativity, market potential, quality, business demands, strategic fit, novelty, customer benefit, feasibility, workability, relevance, thoroughness, usefulness, commercialization, utilization, adoption, specificity (Ebner, Leimeister and Krcmar, 2009; Frederiksen and Knudsen, 2017; Poetz and Schreier, 2012; Dean et al., 2006).

As some evaluation criteria have an overlap or actually have (almost) the same meaning, they are put together. Therefore, in this study there will be 3 main criteria. For example, in the literature the criteria "creativity" is often a sub criteria of novelty. As one needs creativity in order to deliver novel ideas (Ebner et al., 2009), we will define the first criteria as (I) "Novelty". Next, criteria such as: customer benefit, commercialization, business demands and usefulness, all indicate the potential in the market. For that reason the overall term in this study will be (II) "Market potential" (Frederiksen and Knudsen, 2017). At last (III) "Feasibility" describes the strategic fit and the relevance. Some researchers describe "Quality" as an extra criteria. However, in this study, quality will not be used as a criteria or sub criteria. As mentioned by (Poetz and Schreier, 2012; Dean et al., 2006) to get qualitative ideas, it must fulfill the criteria. Hence, this logic will be followed during the study.

I. Novelty:

With novelty is meant that the idea must be rare, unusual or uncommon. Besides, the most novel ideas are the ones which are totally unique (Dean et al., 2006). According to Frederiksen and Knudsen (2017), in order to be novel, an idea has to create a change in doing things. Also, they define product advantage as a criteria linked to novelty. Also, Dean et al. (2006) mention that the novelty of ideas is key. But ideas should be at least solutions to the given problem or opportunity (Suominen et al., 2015). Perry-Smith et al. (2017), mention that highly novel ideas risk having a high chance of getting rejected at an early stage by decision makers. According to Skerlavaj, Cerne and Dysvik (2014), the reason might be that highly novel ideas are more difficult to implement because they may be out-of-the-box which can be considered as risky. On the other hand, a product idea that is novel and useful has the potential to change existing practices and therefore has the potential to become an innovation (Frederiksen and Knudsen, 2017).

II. Market potential:

When a product is adopted and changes existing practices, it is perceived as useful by customers which means that it has market potential (Frederiksen and Knudsen, 2017). According to Ebner et al. (2009), the second criteria must have the ability to solve the underlying problem of the customer in order to create customer benefit. Again, here authors Ebner et al. (2009), define customer benefit as meeting customer needs. Frederiksen and Knudsen (2017) argue that firms also must create value for the firm. The company must somehow benefit from it. This phenomenon, where you create value for customers in order to get something in return is called mutual value (London, Anupindi, Sheth, 2010).

Blue ocean:

However some ideas can be so novel that there is not yet a market for this idea. With no market means that there is no competition. This also means that there isn't any fit with the customer or market. The best way to understand this phenomenon is by imaging a market composed of two sorts of oceans. One is red and the other one is a blue ocean (Kim and Mauborgne, 2005b). All the industries that exist today are represented by red oceans. These are known market spaces (Kim and Mauborgne, 2005b). On the other side, unknown market space or industries that do not exist today can be categorized as blue oceans (Kim and Mauborgne, 2005b). In order to get a deeper understanding of the concept of blue oceans and the link with innovation, the two oceans will be explicitly discussed below.

In red oceans, the industry boundaries are defined and accepted. Everyone in the market knows the competitive rules of the game. Companies try to outperform their rivals and grab a greater market share. This leads to fierce competition hence the name: a red, bloody ocean (Kim and Mauborgne, 2005b). The authors also mention the fact that it is red because rivals fight over shrinking profit (Kim and Mauborgne, 2005a).

While in red oceans the strategy is how to out-compete rivals in an existing market, blue ocean strategy is about creating a new market space where there are no competitors (Kim and Mauborgne, 2005a). A blue ocean is typically defined by creation of demand and the opportunity for high profit growth. Some would think that this strategy may be more risky than red ocean strategy. But as a matter of fact, blue ocean strategy is about risk minimization and not about risk taking (Kim and

Mauborgne, 2005a). Companies can even create blue oceans from within red oceans, just by expanding existing industry boundaries. When taking a closer look at a common characteristic among blue ocean creators, is that they never used competition as their benchmark.

Ultimately, one of the main goals is that it doesn't steal sales from competitors but grow the overall market. Making competition irrelevant by changing the rules of the game and breaking the existing value / cost trade-off (Kim and Mauborgne, 2005b). Finally, dominating over imitators for as long as possible (Kim and Mauborgne, 2005a). An example of a company in a blue ocean are the first cars of Ford. They made cars easy to use, reliable and at an affordable price so the majority of Americans could buy one.

The link between innovation and blue ocean is instead of focusing on beating the competition in existing market spaces, one focuses on getting out of existing market boundaries. Driving costs down while simultaneously driving value up for buyers, gives you a head start in value (Kim and Mauborgne, 2005b) which leaves the competition behind (Kim and Mauborgne, 2005a). This is also called value innovation which is the cornerstone of blue ocean strategy (Kim and Mauborgne, 2005a). It is a different strategic logic. Despite the many advantages of having blue oceans, red oceans will always matter and will always be a fact of business life (Kim and Mauborgne, 2005a).

III. Feasibility:

As last, feasibility stands for how easily an idea could be translated into a commercial product (Poetz and Schreier, 2012). According to Martinsuo and Poskela (2011), feasibility is more than just the technical feasibility, it also includes: manufacturing feasibility and the probability of technical success. Martinsuo and Poskela (2011) mentions that when an idea has poor market potential, it can be reshaped later in the process in order to find a new direction or to improve business potential. However, if an idea has poor technical feasibility it cannot be reshaped later on in the process.

Importantly, according to Frederiksen and Knudsen (2017), all 3 criteria must be fulfilled. Otherwise, product innovation does not always lead to innovation performance in terms of profit (Novelty + Market Potential + Feasibility). So, if not all 3 criteria are fulfilled, it doesn't mean that you will not reach any benefit. It means that one may reach for instance brand value instead of potential innovation performance (Frederiksen and Knudsen, 2017).

3.2.2 Sub criteria

In the literature there are many sub criteria written down. An analysis of the literature describing these subcriteria is made in this next chapter. The reason for using sub criteria is to evaluate an idea thoroughly (Frederiksen and Knudsen, 2017; Martinsuo and Poskela, 2011). In order to get a better understanding, the sub criteria are linked to the evaluation criteria and explained in table 1. This table gives more insights into how an idea must be and can be used to later on link with the four elements of a crisis.

Evaluation criteria	Sub criteria	Description	References (*)
Novelty	Originality	The degree of uniqueness and novelty of an idea.	1
	Imitability	The difficultness to imitate an idea.	2, 3
	Uniqueness	An uncommon, rare idea.	4
	Degree of innovation	The use of new combinations of factors to gain potentially economic benefit.	3
Market potential	Market size	The size of the target market.	3
	Marketability	The possibility to commercialize.	3, 4
	User acceptance	The fulfillment of a customer's demand.	2, 3
	Customer benefit	The added value which customers can experience.	3
	Attractive	How the idea appears to the customer.	1
	Desirability	Customers want the product.	5
	Comprehensibility	The degree to how understandable the idea is.	3
	Applicable	How relevant the idea to the customer is.	2
	Usable	If the idea can be easy to use.	5
	Realizability	Economically feasible.	3
Feasibility	Risk	The risk of failure is compensated by a potential benefit for the firm.	3, 4
	Portfolio fit	The fitting of an idea in the product portfolio of the company.	3, 4
	Development potential	The adaptability to new business requirements.	3
	Financial issues	The budget needed to develop the idea.	5
	Resources	The materials, processes... needed to develop the idea.	4
	Effectiveness	How well the idea solves the problem.	2
	Complete	A detailed, elaborated description of the idea.	2
	Clarity	How well the idea is clearly communicated.	2

Table 1: Sub criteria linked to evaluation criteria.

(*) In this table all used references are: (1) = Witell et al. (2011), (2) = Dean et al. (2006), (3) = Ebner et al. (2009), (4) = Martinsuo and Poskela (2011), (5) = Frederiksen and Knudsen (2017).

In order to make table 1, there were some elements that had an overlap. For example: strategy and portfolio fit have almost the same meaning, so those 2 were put together. As a matter of fact, all the sub criteria were picked very precisely. They are all quite general and fit therefore almost every organization. Although the sub criteria "imitability" can be a criteria which doesn't fit every organization, however, the importance of blue ocean is indicated in this topic.

3.3 Ideas in crisis:

What is already known from the literature, chapter: "2.3 Are ideas needed in times of crisis?", is that companies can use ideas to solve a problem (Dean et al., 2016) or in this case to solve a threat, as it is a key element of a crisis. Remember from chapter 2.0 what is a crisis, that a crisis consists of 4 key elements namely: time pressure, large impact, uncertainty and the last one is threat. During this discussion, there will be a link between the key elements of a crisis with everything we discussed about ideas so far. This means: idea generation phase, idea selection phase, idea criteria and idea sub criteria. The first 2 phases of the idea process are more important to this study, in order to answer the research question.

How ideas must be, is quite unclear in the literature. Some believe that the quality of ideas can be measured by criteria (Poetz and Schreier, 2012), others think that you need quantity in order to have innovative ideas (McAdam and McClelland, 2002). While, according to Suominen et al. (2015), they agree with the quantity of ideas, however the ideas must be especially different types of ideas in order to emerge for innovations. While, Ginotra et al. (2008) even have another perspective. They mention that there are 3 processes that lead to a pool of ideas. The first one is quality, the second one is quantity and the third one is variance in quality. In order to clear this out, there will be a closer look into the literature. Imagine, if quantity is the most important factor, does that mean that *any* idea would be good enough? Despite this, a great part of the literature has been written about evaluating ideas and that those ideas must fulfill criteria and even sub criteria. So, ideas must have a higher standard. If the majority of researchers believed that quantity is the most important factor, they wouldn't emphasize that much on the importance of criteria. Although, believing what has been said by authors (McAdam and McClelland, 2002 ;Suominen, 2015) about the importance of quantity being the most important element, can be right when we take a look at the idea generation phase. In the first stage the focus is on the existence of ideas. On the other hand, in the idea selection phase, the focus in this study will be on quality.

So, during times of crisis, are some criteria or sub criteria more important? Well, if we first take a closer look into the criteria of an idea and the key elements of a crisis, we can conclude that overall the key elements of a crisis may in some way or another have an impact on all evaluation criteria. But, below, the most important ones will be discussed.

- Time pressure influences on novelty: In order to come up with novel ideas which are original, unique and imitable, one may need some creativity. In the existing literature, a moderate level of time pressure can have a positive effect on creativity. It may trigger or it may have a challenging effect. While, a high level of time pressure leads to a limited effect on creativity (Khedhaouria, Montani and Thurik, 2017). The reason might be that a high level of time pressure tempts people to fall back on processes or tools which are familiar instead of looking

for new ones (Khedhaouria et al., 2017). So, during the current crisis or the next one, it is important to find out how high the level of time pressure will impact the firm.

- Uncertainty influences imitability: Another aspect that can have an impact during a crisis is that companies are more willing to imitate the products, services or processes of their competitors. They want to keep their heads above the water due to the uncertainty about what would be profitable and what would not.
- Uncertainty influences market size: During the current crisis, some sectors such as: event, tourism and hotel & catering industry, had to face an immense negative impact on their business. One of the sub criteria discussed in table 5 is “*market size*”, this is the size of the market one wants to target, however, when a firm supplies to one of these 3 sectors, it will notice that suddenly the whole sector went from hundred percent to only a few. However, it may also face a positive impact on market size. Some companies that make products such as: hand sanitizer and mouth masks grew very high. The impact of uncertainty on market size may not be the case for every crisis. But when we take a look at the previous crisis, the financial crisis, especially the banking sector, faced a gigantic impact on short-term (Moore and Mirzaei, 2014). So during the next crisis, it is very uncertain which markets will be affected and if your sector may be part of it or not.
- Time pressure influences feasibility: However, there is no literature that can confirm this statement. There might be that during a crisis, there is a lot of time pressure to come up with new products or services. Therefore, there may be not enough time to think especially about the technical parts, resources or may be overlooked. Also, there is an influence of threat on the sub criteria “*financial issues*” and “*realizability*”. When time is uncertain, investors avoid taking risks and may prefer short-term over long-term (Simon, 2009). When investors are not willing to invest in innovation, the risk of not having enough financial resources to develop an idea might increase. Furthermore, when the market changes because of a crisis the uncertainty of “*realizability*”, which means the economic potential one will gain from the developed idea may also increase.

So far, most of the influences of the key elements on (sub) criteria are negative. Below, there is an overview of the discussion. Unfortunately, there was little literature linking the key elements to the (sub) criteria and what the effect is on a company. The links made in the explanation above, are summarized in the next table 2. Note, that the links made are specific examples and that the impact of a key element on (sub) criteria may be determined by industry (Chatterji and Fabrizio, 2014) or the idea itself. No other links with the key elements influencing the idea (sub) criteria have been found. Market potential is one of the 3 main criteria and hasn't been discussed in this section. However, it is a very important part of the literature, in order to find an answer to the research question. This part will be further analyzed in topic 6: interviews.

Evaluation criteria	Sub criteria	Key element (crisis)	Impact during crisis
Novelty		Time pressure	Positive or negative
	Imitability	Uncertainty	Negative
Market potential		Unknown	Unknown
	Market size	Uncertainty	Negative or positive
	Realizability	Threat and uncertainty	Negative
Feasibility		Time pressure	Negative
	Financial issues	Threat	Negative

Table 2: Which key elements of a crisis may have an influence on which (sub) criteria.

3.4 Implementation phase

The implementation phase is the last phase that will be discussed in this thesis. Despite being the last one, in reality it happens that the idea generation phase and implementation phase take place simultaneously because of complexity (Skerlavaj et al., 2014). During this phase, it is important to sell the idea (Skerlavaj et al., 2014). But it happens that people that have an idea, are not the people who can turn the idea into a business, product or process (McAdam and McClelland, 2002). The reason might be because they lack resources or don't have the power. Hence, it is important to cooperate with each other in the company and externally.

Old ideas never expire, they can be kept until more appropriate circumstances for their application (McAdam and McClelland, 2002). Important to know is that innovation ideas can evolve and develop over time. It can also be combined and recombined with other ideas over a certain period of time (Björk and Magnusson, 2009). However, according to Li et al. (2016), idea age does affect idea implementation. Also idea complexity, while idea popularity does not (Li et al., 2016).

Some say that the key to success is not the invention of ideas but the adoption of practices (Frederiksen and Knudsen, 2017). According to the authors, not every new idea is even worthy of consideration. O'Reilly and Bins (2019), suggest to leaders to separate the good ones that are worth investing in, from the bad ones through incubation. This is a process to determine whether the idea meets the market test. Also called MVP.

Highly novel ideas have a higher chance of getting rejected (Perry-Smith and Mannucci, 2017) because they are considered as risky (Skerlavaj et al., 2014). This means that they are more difficult to implement, as one needs more resources such as time, energy and support. Additionally, Skerlavaj et al. (2014) mention that those kinds of ideas may create uncertainty. Since one of the key elements of a crisis is uncertainty, one should not raise this uncertainty. So perhaps, during a crisis, because of lack of time and support, this will be even more difficult to implement highly novel ideas.

4.0 Can customers generate these ideas?

In order to answer the question if customers can generate these ideas, there will be a closer look of customers in general. Also the advantages and disadvantages of the ideas of customers will be explained. Later on, there will be a discussion about the involvement of customers in the innovation process and to finally end this literature review with a detailed discussion of the reflection of ideas of customers during a crisis.

To capture the benefits of being innovative, firms increasingly attempt to improve their innovation capacity by tapping into sources of external knowledge (Bogers et al., 2018) They also suggest that firms should use external as well as internal ideas to create value. The open innovation process combines internal and external ideas together into platforms, architectures, and systems. These authors argue that external knowledge is widely acknowledged to be crucial for the innovation of a company. It thus assumes that good ideas are not only coming from internal R&D departments (Bogers et al., 2018). Ideas are rather produced outside the company's boundaries, and more frequently by customers.

The literature describes the involvement of customers, as one of the biggest resources for external innovations (Ebner et al., 2009). Where customers take part in both operational and innovation value-creating activities. For this study there will be written about customer involvement, but in the literature it can have a different term as: customer interaction, co-creators of knowledge and customer participation (Veselaj and Torfason, 2019).

By involving customers in the idea generation process, it helps organizations to understand the needs, wants, desires, likes and dislikes of customers (Veselaj and Torfason, 2019). Furthermore, understanding the current and future needs of customers, will increase the likelihood of meeting the customers' expectations by improving existing products and services (Veselaj and Torfason, 2019). According to McAdam and McClelland (2002), it is important to identify the needs of customers and then generate ideas in order to find solutions to address them. According to Poetz and Schreier (2012), 25% of innovation opportunities tend to come from interactions with customers. They showed that the best ideas are more heavily concentrated among users than firms' employees.

When looking at the requirements in the evaluation of an innovative idea in chapter: 3.2 "idea selection phase", the findings of a study of Poetz and Schreier (2012) revealed that user ideas score higher on average on novelty and market potential. However, feasibility has a higher score when the idea comes from internally. Professionals might be more capable of developing ideas into a product for the market than customers. However, according to a study of Veselaj and Torfason (2019), the ideas of customers are more innovative than those of professional service developers. Their study also revealed that products which were generated by users had significantly higher survival rate, measured in years of use, compared to products generated by designers.

So, the reason for professionals being less innovative than those of customers might be that ordinary users generate ideas which are substantially more original and beneficial than professional designers.

In the study of Sarkar and Chakrabarti (2017), designers rely heavily on already existing designs from their memory. They modify these to develop new solutions for a given problem or opportunity. But if firms rely too much on their internal experts from the research and development department, they might be blocked from finding other potentially more successful ideas. (Poetz and Schreier, 2012).

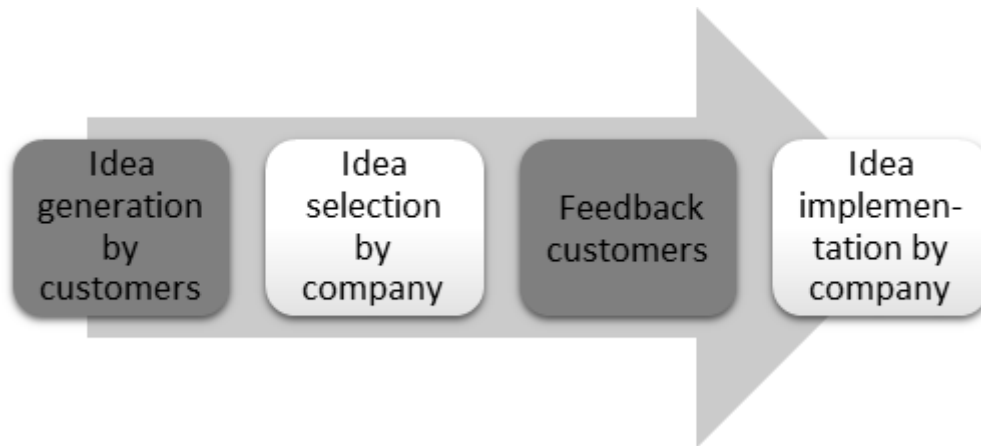


Figure 4: Cognitive framework of customer involvement in the idea process.

In the literature, the involvement of customers in the idea process is extensively discussed. Most of the literature emphasizes the benefit of using customers in the idea generation phase. However, Witell et al. describe in their 2011 article, the process of customer involvement in multiple phases of the idea process. They discuss the first phase as how customers can be involved in the idea process, for companies to benefit the most from it. First, ideas are generated by customers in the idea generation phase. Secondly, the company makes a selection of ideas which are based on the criteria and sub criteria. Thirdly, the model of Witell et al. (2011) focusses on the attractiveness of ideas. However, in previous topic, chapter 3.2.2 subcriteria. Attractiveness is one of the sub criteria that is used in order to find out how customers perceive the idea. For that reason, the model of Wittel et al. (2011) is adapted into an idea process that includes customer involvement. As presented in figure 4, customers identify which ideas they like the most in the feedback phase. Finally, the company makes an evaluation of the best ideas in order to implement one. The authors suggest that the company should have the final say to what needs to be developed further. Customers are suited for coming up with ideas on what they want the product to do for them. These ideas may afterwards be tested through market research. So according to Witell et al. (2011), the best way to use customers during the idea process is in the idea generation phase and when the company wants feedback on the selected ideas. The phase where companies benefit the most of the use of customers is indicated in figure 4 by a greyer color.

Not only does the company benefit from involving customers, also the customers may experience some benefits such as: financial rewards, social benefits, product and service knowledge during the process. Also enjoyment and feeling of being part of a society, also called belonging may all contribute to this (Veselej et al., 2019). Also Foss et al. (2011), adds to that, that in many cases, customers will be the main beneficiaries of the innovation.

4.1 What are the benefits and disadvantages of customer ideas?

Advantages:

What we already know from the previous chapter: 4.0: "can customers generate these ideas?", is that firms using customers' ideas, can benefit from using an extra source of knowledge in order to innovate (Björk and Magnusson, 2009). It has been emphasized that ideas coming from outside the firm, are often different from ideas coming from inside the company. A reason is that customers may have a different perspective than employees (Vrogic et al., 2013) and may also be more creative than professionals (Veselaj and Torfason, 2019). So according to a study of Poetz and Schreier (2012), ideas of customers score higher on novelty and market potential.

Furthermore, users often innovate for themselves, which means that many of those user innovations are characterized by high commercial attractiveness. (Poetz and Schreier, 2012). Also, by involving customers into the process, the company may benefit from lower development costs and improved customer acceptance of the innovations. They even mention that by involving customers it is an approach to mitigate the risks of innovation (Li et al., 2016). In some methods, for example lead users, are willing to take some risks and costs on their behalf. Especially in the idea generation stage, the highest risk is the development risk of an idea (Hiennerth, Lettl and Keinz, 2013). Their goal is to find a solution to their needs (Cooper and Edgett, 2008).

But the biggest advantage is that by involving customers to actively participate, one can have a competitive advantage compared to firms that do not involve customers (Veselaj and Torfason, 2019). This may lead to a better customer relationship. And when customers have a close relationship with a company they are less likely to switch to competitors (Iglesias, Markovic, Bagherzadeh and Singh 2018)

Disadvantages:

Also while discussing the disadvantages there are some elements which are already discussed in previous chapter: 4.0 "can customers generate these ideas?", we know that ideas of customer don't score higher on feasibility than those of experts and the reason is that professionals might be more capable of developing ideas into a product for the market than customers (Poetz and Schreier, 2012). So the ideas coming from customers score lower on feasibility.

As a matter of fact, the most difficult part of collaborating with customers to obtain innovative ideas, is the lack of control a firm has over the customers. The firm doesn't have that much control than with its own staff. It lacks control over factors that may determine creative thinking (Vrogic et al., 2013). Companies need to remain in control as their activities are linked to their strategic goals.

However, some say that customers are not experts and do not know what they want, and if they know what they need or want, they cannot articulate their needs explicitly (Veselaj and Torfason, 2019).

Poetz and Schreier (2012) mention that relying on a method of asking buyers to describe their future product doesn't work. They say that it is generally not likely to have novel product ideas. In this sentence, the authors mean that one can not ask too much or cannot involve the customer too much to prevent serving a niche market. Because that would lead to less novel ideas. Also, Veselaj and Torfason (2019) mention the negative effect of this. They call it an overreliance on customer views and interest. In order to counter this from happening, authors Veselaj and Torfason (2019), suggest

that if one would like to involve customers in the innovation process, the most promising groups would be: innovators, lead users, emergent consumers and market experts. According to Foss et al., (2011), even the involvement of users which are no customers are important for innovation.

During which situation:

Despite extensively writing about the involvement of customers in the innovation process, most of the literature emphasis on the benefit of using customers in early stages (idea generation phase). Veselaj and Torfason (2019), mention that this is especially the case for firms which are specialized in manufacturing goods. This is in contrast for companies specialized in services. During the innovation process, customer involvement can be adapted very late in the innovation process. This makes it possible to involve the customer later in the process than for goods. The cost of involving customers in the development of new services are lower in the later stages. They also mention that the threat of over customization of services is less of an issue during those late stages (Veselaj and Torfason, 2019).

Veselaj and Torfason (2019) suggest that customer involvement is more important for small and medium firms than for large ones. Potentially, because overall, smaller organizations can innovate faster than larger organizations. The reason for this might be that the idea for an innovation has to pass more people in a larger company. As they have a higher workforce (Veselaj and Torfason, 2019).

According to Filieri (2012), the establishment of customers' needs at the beginning of the innovation process is especially difficult in turbulent times, where such needs change very rapidly. Looking back at the key elements of a crisis in this thesis, there might be a potential link between a turbulent time and a crisis. According to Macmillan dictionary, (2020) a turbulent situation is: "*one in which there is a lot of uncontrolled change*". In this thesis, one of the key elements of a crisis was uncertainty and threat. When this happens, it might be that a firm needs to change in order to survive because they lost control. In that way, we may assume that during a time of crisis, the establishment of customers' needs at the beginning of the innovation process is especially difficult, because of rapidly changing needs.

4.2 Ideas and customer involvement in times of crisis

4.2.2 Possible methods for receiving customer ideas

In order to obtain ideas from customers, there are numerous methods that can be used. In this section we will discuss groups of methods wherein different kinds of methods are divided based on results. In this section, there are four groups. The first one are methods that focus on the understanding of participants. The second one, focuses on generating as many ideas as possible in a short time. The third method focuses on market opportunities and identifying customer ideas. Lastly, group 4 discusses a method where one will get no difference at all. Lateron, the methods will also be linked with how they would perform in a time of crisis.

Group 1: focuses on gaining a better understanding of participants. This may be achieved by multiple methods such as: in-depth interviews, focus groups, surveys, observations and so on (Chulvi, Gonzalez-Cruz, Mulet and Aguilar-Zambrano, 2013). Companies use this method to talk about problems or challenges (Cooper and Edgett, 2008) that customers experience and to get into the lifestyle of the customer. These methods are very often used however the biggest advantage for this method is that customers who participate have to rely on their memories of previous experiences in order to come up with new ideas (Witell et al., 2011).

Group 2: focuses on generating as many ideas as possible in a very short time (Cooper and Edgett, 2008). More importantly, those ideas must be useful to the company.

Methods that have this kind of result are: crowdsourcing, innovation contests, and brainstorming sessions. According to Ritter and Mostert (2018), they mention that participants generate more ideas that are useful to customers. This means that it has a higher chance on market potential. On the other hand, methods such as crowdsourcing are getting more popular because of an increasing amount of online users and widespread availability of the internet (Poetz and Schreier, 2012). According to Wöhler and Reinhardt (2020) methods such as crowdsourcing have the highest impact on the first 2 stages of the idea process, namely: the idea generation phase and the idea selection phase. Additionally, customers that participate in methods like these, can generate creative ideas (Acar, 2018). In the study of Poetz and Schreier (2012) they found that customers generate more novel ideas that have market potential but low feasibility.

Group 3: are methods such as lead user analysis. The goal is to identify innovative customers or users (Cooper and Edgett, 2008). Lead users take the lead when it comes to functionally novel innovations (Von Hippel, 2008). Lead users have a need before anyone else has that need and they want a solution for that (Cooper and Edgett, 2008).

Group 4: the last group is also an option which companies can opt for. In this way, companies use no method at all. Ideas are spontaneously inserted into the company without making use of any structure or process. According to Chulvi et al. (2013), they state that using no method at all, leads to less novel and useful solutions than any other method.

Below in table 3, there is an overview of every criteria based on the different methods. Because of little literature found, the table is not fully filled. Remarkable is that in the literature there is especially little information on feasibility or any of the sub criteria of feasibility. This wasn't the case for novelty and market potential, often there was some link with creativity (novelty) or with customer usefulness (market potential). So based on sub criteria it was possible to develop this table to this extent.

Group of methods \ criteria	Novelty	Market potential	Feasibility
Group 1: interviews, surveys, observations, focus groups,..	Unknown	Unknown	Unknown
Group 2: brainstorming sessions, crowdsourcing, innovation contests, ..	High	High	Low
Group 3: Lead-user	High	Low to medium	High
Group 4: No method	Low	Low	unknown

Table 3: evaluation of idea methods based on criteria.

Based on table 3, there are some different outcomes of ideas from the different groups. This is logical as they all focus on a different goal. When comparing this table to the crisis, one may notice based on the literature, that having no method (group 4) is the worst case scenario. This leads to having low novelty ideas with low market potential. Remember that Poetz and Schreier (2012) described these two criteria as having a high potential, coming from customers. So if those are very low, it may not be beneficial to use customers or this method at all.

Furthermore, group 3 which includes lead-users, has a very interesting approach as a method. This method is characterized by having high novelty ideas and low to medium market potential because they have a need before anyone else (Cooper and Edgett, 2008). Although, it is quite unclear what the benefits or disadvantages of this group are in a crisis. Because of their high score on feasibility and novelty this may potentially lead to more and better developed ideas. And because they have a need before anyone else, it could create some interesting views on market potential. However, it may also lead to a negative outcome, maybe lead users want to have a solution for their needs, but because of their niche market, it may not fulfill other customers' needs and this may lead to an idea not interesting for others. But as has been said before, there is too little information in the literature to make any conclusions about this.

Next, the results of an idea coming from methods such as interviews are very unclear. In the literature, there has no information been found about any of the criteria and methods of group 1. However, according to the main goal of these methods, it is interesting to get more insights into the customer perspective during a crisis (Simon, 2009). Also, during a crisis, the preferences of customers may change, so by asking the customer needs, companies can figure out what the needs and wants of customers are (Diebner et al., 2020).

On the other hand, group 2 has the same findings as already mentioned how the ideas of customers are in general. Also in the first stage of topic 3: "idea process", it may be beneficial to gain a lot of ideas during this phase (Suominen et al., 2015). Furthermore, methods from group 2 can easily be organized during a crisis situation. Digital tools have become even more popular during this crisis.

One of the key elements discussed in the crisis was time pressure. When a company organizes an online brainstorming event, they will get a lot of ideas very quickly.

4.2.3 Individual versus team:

In the different methods discussed above, customers can be approached individual or in group. In this section, we are going to find out what is most suitable during a crisis. . First, the individual approach will be discussed afterwards groups with their different kinds.

Individual:

It is well known that creative people have artistic values (McAdam and McClelland, 2002). Furthermore, they are attracted to complex situations, tolerate ambiguity, are driven to excellence and persevere in adversity. According to Suominen et al. (2015), individual creativity is the main source of innovation. Creativity consists of 3 elements such as: creative skills, expertise and motivation. As a matter of fact, expertise and creative thinking are natural resources of an individual, but motivation is the determining factor of what people will actually do. By taking a closer look at expertise, here does the quantity grow of generated ideas. With expertise the generated ideas are of different types, more complex than without any expertise. They see creative thinking as a capacity to put existing ideas together in new combinations (Suominen et al., 2015).

Besides, according to McAdam and McClelland (2002), individuals will have preference for offering innovative or adaptive solutions. An innovation solution can be seen as a step-change solution and an adaptive solution more like an incremental solution. However creative people need autonomy, make independent judgements, thrive on risk and are self-confident (McAdam and McClelland, 2002).

Group:

If one places people in a group and asks them to perform a task, it does not mean that they will effectively perform that specific task (King, 2002). Although, it is well known, that a large group of people is smarter than only 1 person, no matter how brilliant that person may be (Ebner et al., 2009).

According to a study of Suominen et al., (2015), on average an individual generates 12 ideas while people who work in a group generate 15% more ideas. This is realizable because participants can have access to the experiences of others, which can lead to a creative stimulation (Girotra et al., 2008).

Thus, if customers generate ideas individually or in groups, it does have an impact. Because having interactions with others influences various aspects of the creative process (Perry-Smith and Mannucci, 2017). Suominen et al. (2015), mention that when 2 people work together, they generate more ideas than two individuals generating ideas separately. What is very remarkable is that groups are more willing to take risks than individuals (McAdam and McClelland, 2002). There are factors that can promote innovation in a group environment, such as: group structure and cohesiveness between team members (McAdam and McClelland, 2002).

Group structure: In this subtopic, the groups are discussed as homogeneous groups, heterogeneity groups and the last one as hybrid groups.

(I) Homogeneous groups:

Homogeneous groups are groups with people who have the same background, same elements. By taking a closer look at the use of homogeneous groups in innovation, King (2002) mentions that homogeneous groups are typically less goal and task oriented. This may lead to unrealistic and poor team decision-making. However, homogeneous teams are the perfect group for a smooth implementation of an innovation (McAdam and McClelland, 2002).

(II) Heterogeneous groups:

With heterogeneous groups in this study is meant, people with different backgrounds. Heterogeneous groups are, according to King (2002) more likely to be creative and reach quality decisions compared to homogeneity groups. Also, heterogeneous teams are great for idea generation because by using them, companies avoid groupthink (McAdam and McClelland, 2002). Additionally, Suominen et al. (2015), recommend for idea generation and evaluation to use demographic diversity. It is fruitful to use mixed aged groups for idea generation, because people with different types of expertise see things from different perspectives. Therefore, it generates totally different types of ideas (Suominen et al., 2015). However, these authors also mention that people with higher education are more prone to generate more complex ideas. They might be able to look and discover matters from various angles (Frederiksen and Knudsen, 2017). Whereas, the result of a study of Suominen et al. (2015) suggests that people of all backgrounds can generate ideas.

(III) Hybrid groups:

Hybrid groups are seen in the literature as groups with 2 different kinds of people. According to Li et al. (2016), the longer the description of an idea, the less likely it would be selected for implementation. The ability to manage diversity of knowledge and skill is called hybrid management (Suominen et al., 2015). According to Girotra et al. (2010), hybrid groups are able to generate more and better ideas. The authors add to this that hybrid groups also have a better ability to categorize good ideas from bad ideas. However they perform poorly in selecting the best ideas (Girotra et al., 2010).

4.2 How are the ideas (of customers) during times of crisis

We previously discussed the connection between crisis and idea criteria and sub criteria in chapter: "3.3 ideas in crisis". In this discussion, we will first focus on what is already known from the literature by starting off with ideas during a crisis. Later on, the link with ideas of customers will be made and furthermore, the connection between ideas of customers during times of crisis. At the end of this topic, we will discuss elements which are not covered by the literature and may potentially be studied in the methodology.

Based on definitions of crisis (Ma and Liang, 2018; King, 2002; Pearson and Clair, 1998 Silveira dos Santos et al., 2016), we found four key elements that characterize a crisis, namely: large impact, uncertainty, threat and time pressure. Authors Hao et al. (2016), mention that firms have to be creative in order to solve problems or to develop innovative products. By taking a closer look at ideas in general, one may notice that an idea should be a solution to a given problem or opportunity (Suominen et al., 2015).

But how is an idea supposed to be? That is quite unclear in the literature. So in order to choose the right idea (Martinsuo and Poskela, 2011), companies should evaluate which idea has potential (McAdam and McClelland, 2002) based on (sub) criteria namely: novelty, market potential and feasibility. In chapter 3.3.: "ideas in crisis", we discussed the key elements of a crisis that influences the criteria and sub criteria, namely:

- Time pressure had a negative or positive influence on novelty.
- Uncertainty had a negative influence on imitability.
- Uncertainty combined with large impact had a negative or positive influence on market size.
- Threat combined with uncertainty has a negative impact on realizability
- Time pressure has a negative impact on feasibility.
- Threat has a negative impact on financial issues.

Because in chapter 3.3 there was no discussion of "market potential", it will be discussed over here. When talking about the criteria 'market potential', we emphasize that it must meet customer's needs (Ebner et al., 2009). However, during this study, we learned that the behavior of customers might change in times of a crisis (Simon, 2009). During this crisis, people become more aware about the situation and will focus on basic elements such as: price, functionality and safety (Diebner et al., 2020). This can possibly mean that the needs of customers may also change during a crisis. According to McAdam and McClelland (2002), companies in slow changing environments are more likely to accept ideas coming from the market, compared to fast changing environments. The reason might be that they have time to survey market demands and use R&D to develop more innovative solutions. One of the key elements of a crisis was time pressure, and may potentially indicate that the environment's speed increases. So companies may be less likely to accept ideas coming from the market when the environments pace increases. However, Veselaj and Torfason (2019) emphasis that firms in fast changing environments must definitely identify, absorb and integrate knowledge from external sources in order to survive. So far, it has not been clear if elements of a crisis may affect market potential in a positive or negative way. But what we do know, is that ideas coming from the market (which includes customers) is even more important.

As a matter of fact, involving customers during a crisis can provide more insight into the environment or lifestyle of the customer (Veselaj et al., 2019). However, it can be quite difficult to get them involved when they are facing a hard time themselves. So how much impact can customers face and still be valuable in the idea process during a crisis? This is unknown from the literature but a very important aspect that must be studied in the future.

Also in the literature, there has been extensively written about the involvement of customers in the innovation process, but most of the literature emphasis on the benefit of using customers in early stages of the process (idea generation phase) (Poetz and Schreier, 2012). The idea process in chapter 4.0: "can customers generate these ideas", is adapted to make the link with the involvement of customers in the process clearer. Remembering that during the idea generation phase we especially need to have a lot of creative ideas, can be achieved by using customers for generating ideas. While, according to Filieri (2012), the involvement of customers at the beginning of the innovation process is especially difficult in turbulent times. Changes in need happen very rapidly (Filieri, 2012). When looking back at the key elements of a crisis in this thesis, there might be a potential link between a turbulent time and a crisis. According to Macmillan dictionary, (2020) a turbulent situation is: "one in which there is a lot of uncontrolled change". In this thesis, one of the key elements of a crisis was uncertainty and threat. When this happens, it might be that a firm needs to change to survive because they lost control. In that way, we may assume that during a time of crisis, the involvement of customers in the beginning of the innovation process is especially difficult.

Furthermore, we learned that not every idea is worthy enough and that ideas must have a certain standard in the idea selection phase. According to a study of Poetz and Schreier (2012), user ideas score higher on average on novelty and market potential. On the other hand, feasibility has a higher score when the idea comes from internally. While customers are better at generating highly novel ideas, they do have a higher chance of getting rejected (Perry-Smith and Mannucci, 2017) because they are considered as risky. It means that a company needs more resources such as time, energy and support to implement those ideas (Skerlavaj et al., 2014). Additionally, they mention that those kinds of ideas may even create uncertainty. Since one of the key elements of a crisis is uncertainty, one should not raise this, as it may lead to more difficulty. Also the one of the resources they need to implement those highly novel ideas is time. This can also be linked by one of the key elements of a crisis namely, time pressure.

After being aware of this, companies should use in times of a crisis methods based on group 2. These are: brainstorming sessions, crowdsourcing or innovation contests. These methods create ideas coming from customers with a high score on novelty and market potential. What companies shouldn't use during a crisis, is no method. Moreover, when customers can be put into groups (such as the methods in group 2), where short-lived heterogeneity groups are the most recommended. They are the most recommended because the creativity can be stimulated by the diversity in the group.

Based on the literature, we are able to answer the research question and sub question to the following extent. Starting off with the sub questions.

On the first sub question: "*Are ideas needed in time of crisis?*", we know that the role of innovation during a crisis is important (Bar Am et al., 2020). Generating ideas is the first step to innovation and is a particularly important phase as it has a high impact on the success of innovation (Björk and Magnussen, 2009). On the other hand, the ultimate goal of an idea is to solve a problem (Dean et al., 2006). So, during a crisis, companies may face difficulties which can be seen as a threat, that needs to be solved. In chapter 2.0 "what is a crisis", one key element that was discussed, was threat. In this way, ideas may solve the problems a company may face during a crisis. We can conclude that companies need ideas during a crisis.

According to Frederiksen and Knudsen, (2017) not every idea is even worthy of consideration. So, during a crisis what kind of ideas are needed? In the literature review, we made an analysis between the key elements of a crisis and the criteria and sub criteria of an idea. Afterwards, we compared them to each other to get more insights. Despite the efforts, it was not possible to find the right answer. It must be further investigated by the interviews.

The second sub question is: "*Can customers generate these ideas?*". Since it is unclear what kind of ideas are needed in a crisis, we cannot fully answer this question now. However, we did find the importance of involving customers in the idea process and what kind of ideas they generate.

So, besides ideas, creativity is also needed to find a solution (Dean et al., 2006). Customers can generate a lot of creative ideas. Which is also needed during the first stage of the idea process. When customers generate ideas, they are typically more novel and have a higher market potential score compared to professionals. Although, novel ideas have a higher chance of getting rejected as they have an image of being risky (Skerlavaj et al., 2014). This is a negative effect for the company because novel ideas are harder to implement. Firms need resources as: time, energy and support for this (Skerlavaj et al., 2014). But in a crisis, there is time pressure and firms may not have much time. So this can lead to a negative impact on the creativity of customers.

On the other hand, in a crisis, customers may change preferences (Diebner et al., 2020). In this, way, they become even more important as they can be a great insight into their needs and wants. So, based on the research question: "*Can companies use customer ideas to their advantage during a time of crisis?*", it is possible. However, companies must understand where in the idea process the involvement of customers take the company to a higher level and in which situation the company has its strengths.

5. Methodology

In order to find more answers to the research questions, a field study has been done. In this thesis, the methodology is qualitative research, where 8 people were interviewed. During these interviews, we wanted to know more about: (I) how different the corona crisis is compared to a previous crisis, (II) if ideas are needed in a crisis, and (III) if companies believe in the involvement of customers during a crisis.

In total, we sent 40 mails out. Of those 40, there was a positive reply from 18 people, which showed interest in my study. Eventually, 8 people participated in the interviews. Besides those 8, there were also others interested in participating. They were not interviewed because there was already a clear overview of the responses of the other interviewees on my research.

So, I started my mailings by contacting organizations with an extended network. These organizations were: UNIZO, FLANDERS.DC, VOKA Limburg, VOKA Mechelen-Kempen and VLAIO. One of them gave me the insight to use consultancies for my study. Consultancies work with customers and end customers, so they have experience with involving them. Also, because the consultancy firms were all focused on 'design' and 'strategy', they all had very interesting insights on innovations and ideas in general. So we interviewed three of them and based on their answers on the question, "if customers were impacted negatively by the current crisis", most of them replied that their customers didn't face much inconvenience. So that let us think about the four key elements that were discussed about the crisis, in topic 2.0: "what is a crisis". One of them is the large impact. That is why we wanted to create a complete view by interviewing companies working in sectors that faced the largest impact. Those sectors are: hospitals, tourism, event and hotel & catering (Vellinga et al., 2021). Because of the many positive responses from companies that supply customers with tents for parties, we interviewed 3 of them. Furthermore, a wholesaler of food & beverage which supplies to hotel & catering was interviewed, as well as a non-profit organization that sells handmade chocolate.

When discussing the profile of the interviewees, we notice the following: they all had a very good position in the company as they have insights in the financial healthiness of the company and future plans. Furthermore, they know a lot about innovation and or marketing, including customers. That is why most of them were interviewed. Their function is: co-(founders) / CEO, or marketing and sales coordinator. Overall, the average amount of time per interview was 45 minutes. More information about the interview guide can be found in the appendix: 1. Interview guide. Besides, the interviews were semi-structured and were taken virtually, via Google meet.

5.1 Interviews

To summarize, 3 consultant companies have been interviewed, 2 companies in the food sector and 3 companies which are specialized in hiring and selling tents. All of them felt the impact of corona on their business. These interviews were semi-structured and were taken virtually, via Google meet. Below, there will be a short description of every interviewee and the company in which they work.

5.1.1 Interviewee 1

Interviewee 1 was a coordinator of design labs. He works in a design and innovation consultancy in Belgium. He is responsible for the different projects. Their average customers of the company are varying, they have very big ones such as multinational companies, but also small companies. It offers services and is not very big and has existed for 52 years. During the corona crisis, they faced a positive impact on their business. He noticed that his customers didn't experience much inconvenience.

5.1.2 Interviewee 2

This interviewee is co-founder, partner of a consultancy. She does research about tools to generate ideas. She also teaches at the university of Antwerp. This firm offers services and always uses stakeholders (including end customers) during their innovation processes. Their average customers are governmental companies. The size of the company is small and the existence is 34 years. During the crisis they faced a positive impact. She believes that their customers also faced a positive impact as they became more conscious during the crisis.

5.1.3 Interviewee 3

This person is co-founder of a consultancy in Belgium. He has a helicopter view on the organization and has the responsibility to find a strategic path to grow even further. The size of the company is small and was established in 2007. They offer just like the other 2 consultancy firms services. During the crisis they faced a positive impact. The customers of this company are smaller companies than the customers of interviewee 2 and 1. the impact their customers faced during the crisis is unclear.

5.1.4 Interviewee 4

This interviewee is coordinator marketing and sales. He works for a non-profit company that employs people with autism. They are employed in the food sector as they make handmade chocolate products. The size of the firm is small and has existed since 1991. The customers of this organization are people with autism, their family, but also companies. These companies can be very large with 8000 people working in it, or also small companies and SMEs. During the crisis, they faced a very positive impact as a result of their innovation. Their innovation was to send out chocolate that would fit in your letterbox. The innovation was based on an old activity they picked up again. The result was that they almost gained 3 times their revenue of the year before during the pandemic.

5.1.5 Interviewee 5

This person teaches at the university of brussels and is co-founder of a company in the event sector, specialized in sustainable tents. Very remarkable is that everything they do is inhouse. Which means they have their own development, own production and sales. The company is very young and small, it is a start up. They sell and offer their tents as a service. The profiles of their customers vary depending on supermarkets, municipalities and so on. During the pandemic they also faced a negative impact even by innovating. They first tried to come up with 2 new tents which were based on another tent, by doing this they wanted to provide their services to supermarkets. However it didn't work out, so they now work on a new customer segment and this had a positive impact.

5.1.6 Interviewee 6

The interviewee is founder of a company that rents tents to private individuals. It is a small and very young company, a startup and was established 4 years ago. Their business focuses on services by renting tents and bouncy castles. The company is active in the event sector and faced a negative impact of the corona crisis. During the crisis, he made sure to broaden his product range. In this way, he could serve customers better by providing them with more tents.

5.1.7 Interviewee 7

This person is the CEO of an SME, which specializes in supplying products to hotels and catering. They sell everything that has to do with food. They focus on hotels, restaurants, small grocery stores, gas stations, and so on. Before she became CEO, she was part of the sales team. The company is quite big and has existed for many years, since 1950 to be more precise. During the crisis, they first faced a negative impact and dropped 40% compared to the year before, however they made a lot of efforts to innovate such as: (I) they left one team out to follow the restrictions of the government, (II) they narrowed their assortment, (III) they offered a more service to customers by listening to their problems, (IV) they focused on a new segment. (V) And finally, they did an acquisition. Because of all their actions, they are now almost at the same level as 2 years ago.

5.1.8 Interviewee 8

This interviewee is a marketing and sales representative for tents. They focus on event planners to hire their tents for weddings or parties which are a bit bigger than the average party. Not only do they provide services, they also sell their tents especially because of the pandemic to restaurants and cafes. The size of the company is quite small and has existed for 5 years. Because of the pandemic they faced a negative impact, where they could not operate, however because of their innovations, they noticed some positive outcomes, while the final results are not could not be confirmed yet. Their actions were: reaching out to a new market, optimizing their internal processes, investing more time in customers to understand their needs and wants, and they also did a merger of another company.

5.2 Process:

The process of conducting qualitative research is the following: first, every interviewee was interviewed in Dutch, because they are all native speakers therefore, it would be more convenient and comfortable for them. Then, for the ease of this study, Google meet has an option to record an online meeting, which is very convenient to rewatch and listen to afterwards. Next, every word the interviewee said has been written down into a transcript in Dutch as well.

Third, it was time to code my transcripts in order to find a connection, relationship or any links between the different interviewees or literature. According to Saldana (2008, p.3) a code is: *"a code in qualitative inquiry is most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data."* The process of coding every transcript happened first via a software program called Quirkos, then manually again. The added value of doing it a second time manually is that it gives one a better understanding and perspective on the interviews. Also to avoid making errors. After the first

transcript, a mind map was created based on the interviews to get a helicopter view, which is an easy tool to make links between different topics.

Furthermore, the translation into English was made for the summary and the quotes were literally translated. With the main reason to not lose character or any message the interviewee wanted to bring over.

6. Results

In this topic, there will be a detailed summary of the interviews with quotes. We will try to keep the same structure as we did with the literature review. By focusing first on the crisis, then we will discuss ideas and make a link with crisis and ideas and finally we will discuss customer involvement, where we will also make a link with crisis and ideas. Afterwards, there will also be connections to the literature study, earlier discussed in topic 4.3: "how are ideas of customers during time of crisis". This can be found in 6.4 "the discussion".

6.1 Crisis

In this part of the results we will focus on how the corona crisis impacted the firms, what the differences were with previous crises compared to the current crisis. Next, how customers behave during the current crisis and finally if ideas are needed in times of crisis.

All interviewees except for interviewee 6 and 8 haven't faced a crisis before. These two interviewees, who are employed in the tent sector, have a very young start-up. Interviewees 4 and 5 and the customers of interviewees 1-3, had faced a financial crisis before, or a financially related crisis. However, interviewee 7 mentioned that in the late nineties, they faced a dioxin crisis.

"I think there was a dioxin crisis in the late 1990s. It was mainly about dioxin in food products. So, food products were being blocked and had to be recalled. We have experienced that once. But nothing like this. Anyway, it is not comparable to what we see now." - (Interviewee 7)

This crisis was especially focused on supply management in general and the company's logistics. She also mentioned the differences such as: the corona crisis having a bigger impact on their company and customers. Also, there are more and stricter restrictions in the way of working implied by governance, which leads to a great impact on their finances. During the dioxin crisis they didn't face such a great impact. Some products were getting blocked or must be retrieved because of contamination hazards. Overall, the interviewees mentioned on the question what the differences were with the corona crisis compared to a previous crisis, that it had a big impact on their sector (interviewees: 1 and 3) and that there was a lot of uncertainty (interviewees 6 and 8). Interviewee 5 adds to that, that his customers became unemployed just on one day. Additionally, interviewee 4 mentioned that the strict safety rules implied by the government were very different. It made it very difficult for them to operate as they also work with people with autism that may potentially face difficulties with change in general.

Although, interviewee 7 mentioned that the biggest challenge has yet to come. When corona has left the building, she is worried that some customers are not able to pay their debts.

"Our customers depend on a drip." – (interviewee 7)

During previous crises, the main challenges were: to keep your business financially healthy and to cut costs (interviewee 4, 5 and 8). This is very logical considering times of a financial crisis. Besides, interviewees (4 and 8) believe that the biggest challenge of a crisis is to keep staff employed. So, to overcome that difficult time in the past companies can do many things according to the interviewees. Some say you can keep your cash, sell more, look for new clients or make good financial deals.

6.1.1 customer behavior in times of crisis

Some interviewees didn't recognize any shift in customer behavior in this crisis, while others experienced a lot. Interviewee 5 and 6 were both employed in a company that offers tents. They said to recognize no difference because they were not very active the past months. However interviewee 8 is employed in the same sector and she recognized that there was a difference in speed, price and customers being more aware, comparing more than before.

One of the sectors that got the biggest negative impact of the covid-19 crisis is on hotels, restaurants & cafes. Interviewee 7, is the CEO of a company that supplies food to hotel, restaurant and cafe entrepreneurs. Because the clients faced such a big impact, they faced an impact too, but indirectly. During the different lockdowns she saw a lot of mood swings and emotions of customers. Also interviewee 4 mentions the emotions of customers. During the first lockdown there was a lot of solidarity but then everyone realized that corona was not leaving soon and during lockdown 2 and 3 everyone became corona-tired. He also says that some customers, especially SMEs are facing a hard time now, especially financially.

Interviewee 2 saw that because the crisis took so long, it had a positive impact on society and especially on the planet. Her customers begin to realize that these aspects get more and more important. Interviewee 1 saw no difference, only that some customers wanted to postpone some projects, because they wanted to do it more slowly. take more time to think about which direction they want to go during the crisis.

6.1.2: Are ideas needed during a crisis?

To the question: "if ideas are needed in a crisis?", they all answered very confidently "yes". Interviewee 1 and 5 mentioned that ideas are not only necessary in crises. Additionally, interviewee 6 mentioned that ideas are always important regardless of any situation. The reason they say this with so much confidence is because they all invested in innovation during this crisis. Interviewee 3 adds to that, that ideas are the starting point of innovation.

In chapter 5.1: "interviews", we explained what those companies did in order to survive. The consultancy firms (interviewees 1-3) helped their customers to innovate as it is their core business. A very remarkable aspect was that all respondents believe that innovation is important during a crisis, despite that not all of them will actually be operating during this crisis. In the tent industry (event sector), all of them mentioned that they are innovating for when the pandemic ends. They cannot see themselves successfully operating during a pandemic. All the others innovate because they see a market fit in this crisis.

My goal is not to operate during a pandemic ... Yes, we are now making investments, in order to be able to show off with new things after the crisis. In that way, we can say "yes" to almost every customer. – (Interviewee 6)

6.2 Ideas

The focus of this sub topic will especially be focused on the idea selection phase, where we will discuss the criteria of an idea in normal or stable times and during a crisis. First we will start with how ideas arise in general.

When asking the interviewees how ideas arise, almost everyone mentions: "internally". However, when listening to their stories most of them got ideas by a mix of intern and by talking with customers (interviewee 4, 5, 6, 7 & 8). Interviewee 2 says that they get ideas based on the user research. Additionally, interviewee 1 says that an idea arises because of a higher ambition.

6.2.1 criteria

During the interviews, there were some criteria that were mentioned such as: an idea must be based on a budget, it must fulfill a need, it must be feasible and it must be viable for the company. However interviewee 1 mentioned that an interview must design a behavior as a criteria while interviewee 2 said that it must have a certain impact on society. These were 2 innovation consultancies. Interviewee 5 said that for generating ideas, you need a lot of spare time because we live in a world that is too busy to generate ideas. He adds that a crisis is a stressful situation that can block creativity.

When criteria of an innovative idea are compared to the criteria of an idea during a crisis almost everyone said something else except for interviewee 3 and 4. They both said that during a crisis the urgency increases. Interviewee 8 said that time will be more important so if it is possible, one can spend more time on the elaboration. This respondent believes that you don't have to speed up, but if it is possible to go even slower, and when the crisis is over, then you need to speed up. She also mentioned that during a crisis the necessity of a need increases. Again, interviewee 3 had a very remarkable perspective on this. He compares the needs of customers during a crisis with the pyramid of maslow.

I think in a crisis, depending on which crisis, you could say that the functionality of a need, product, service or idea ... is based on some kind of pyramid. On the bottom of the pyramid, you could say that there is some kind of basic functionality. So Maslow's pyramid assumes that people have needs. Those needs can be eg: shelter, food, .. When that is fulfilled, you move to the next stage, where you need friends and connections, towards social needs. If this is also fulfilled, you go to the highest level and this has to do with self-development. But whenever something is not right, for example at the beginning of the pyramid, you go back to this level and it gets priority again. In a time of crisis, I think some elements are falling back to the basic needs, basic elements. If you are afraid in a crisis that you will no longer be able to buy toilet paper on the market, you may probably buy toilet paper that is a little less soft and does not have 3 or 4 layers. Or, on the other hand, it could be that you need to be able to come up with a new solution very quickly. However, the longer the crisis lasts, the more other players may enter the market as well. For example, with the decontamination poles, first it was important that companies had one where customers could

disinfect their hands when they clicked on a button. It didn't matter whether that pole was ugly or not, as long as the customer could use it, it was good enough. But after a while, other companies started making such a pole and people started to look more at other things like appearance, smell, and so on. Thus they rise on their pyramid from basic elements towards customer experience. - (Interviewee 3).

He also mentions that during the crisis, the ideas that were already there, were mainly accelerated. According to interviewee 2, an idea during a crisis will especially have an impact on society. While interviewee 7 mentions that affordability will be more important and interviewee 6 doesn't see any differences in criteria during a crisis. Maybe a reason for this might be that interviewee 6 is not operating during the crisis, so he will not take the crisis as a consideration during innovation.

Additionally, interviewee 3 mentions that you first need a lot of ideas. However, some companies want to make an idea too perfect by investing too much money and time in it. Additionally, interviewee 7 confirms that you need a lot of ideas in order to end up with a good idea, because not every idea works. On the other hand interviewee 4 believes that there are already enough innovative ideas, it is about the criteria an idea must fulfill. While, interviewee 5 mentions that in order to have good ideas you need to have a culture that promotes innovation. And this is promoted by creating free time.

Moreover, Interviewee 5 mentioned that during the crisis they innovated by launching a new product on the market. However, this did not turned out like how they expected it. When the product was on the market, this was not what customers wanted. So the company of interviewee 5 evaluated what went wrong and how they were able to improve. They came to the conclusion that they had to target a different market segmentation. Later, this turned out to be successful. Their results are higher than when they wouldn't do anything. So even though, a wrong / bad idea can lead to a good idea. So having a bad idea is still better than having no idea at all.

6.3 Customer involvement

In this section, we will have a closer look at whether customers can generate innovative ideas during a time of crisis. Also, we will look into the advantages and disadvantages of involving customers. Next, the different kinds of methods companies use to gain customers' ideas are explained.

6.3.1 customer ideas

Do you know the red monkey of Jef Staes? I don't know if you follow him but you need something on the periphery somewhere... most of the innovative varieties in jungles don't happen in the middle of the jungle, it happens on the outside, where the jungle turns into cultural landscape. There you have the best ecosystem to get new ideas. If you are completely in the middle of your organization, it is one big overview and none of that is important for the person sitting in the middle. The most interesting is that fringe, that zone where there are new projects, but also where there are exchanges between producer and customer, between subcontractor and customer. In our case, that's Bpost. That's where the fun things happen. - Interviewee 4.

With this quote, interviewee 4 means that you need something or someone outside your firm to give you a different perspective that leads to new things.

When the question is asked, whether customers can generate innovative ideas during a crisis everyone replies "yes" except for one interviewee. Interviewee 6 says that he doesn't have much experience with customers generating ideas. He says that it only happened once, but all the other times he didn't bother because those ideas do not fulfill his criteria (budget, advantage for firm and little storage space). When the question is asked if those ideas have the right criteria interviewee 3 and 1 say that it rarely happens. Interviewee 3 thinks that customers can generate ideas with criteria in mind, but they can only do it because they just happen to be creative. He also thinks that if you want to be good at something you need training. Also, the ideas of customers are often incremental and focused on the short term. On the other hand, he suggests using customers during generating ideas to know more about their lifestyle, context, norms, needs, wishes, etc.. This means to use customers' information and not really to involve them. So actually, interviewee 1 and 3 confirm the expectations of interviewee 6. Other interviewees (2, 4, 5, 7 and 8) do believe in the ideas of customers.

6.3.2 methods:

Ideas of customers can be obtained in multiple ways as seen in the literature. Based on the interviews, these are the top 4 most often used methods: Interviews (Interviewee 1, 2, 4, 5, 7, 8), surveys (Interviewee 2, 4, 5), brainstorming session (1, 8) and co-creation (1, 2).

As a matter of fact, more than half the interviewees used individuals for multiple reasons. Because, some of their customers are competitors from each other (5,8) Although interviewee 7 has used both individuals as a group to generate ideas. She thinks that it is sometimes hard to keep focus without a moderator but if someone has an opinion, you can easily tell who shares that opinion. Also interviewee 5 mentions that it is a good thing when customers influence each other, therefore they can reinforce. According to interviewee 1 and 2 it depends on multiple factors when a design consultancy will use individuals or groups, such as: budget, time, sample size and sensitivity.

"..It depends a on the type of topic, the more sensitive a topic is, the better that we do individual interviews, of course, because people talk more freely that way." – (interviewee 2)

6.3.3 advantages and disadvantages of customer involvement

When using customers in the innovation process, one respondent doesn't see the advantages. Because customers do not often come up with ideas with the right criteria, he believes that customers can only be used when they have to choose between 2 themes for instance. Also, he says he has 4 years of experience and because the customer has no experience, it is better to leave the customer out of the process. He is also afraid that customers won't reply to him.

"The customer does not have the experience and vision that I have built up over 4 years. They don't see our full storage, so they don't go along with those important points in their decision-making process before submitting an idea." – (Interviewee 6)

When asked in which phase of the innovation process a company can profit the most from the involvement of customers, the opinions are quite diverse. Even between the three consultancy firms.

Interviewee 1 says that customers must be used for knowing pains and gains. They are in all situations important, except when a company is fully cost-driven. Interviewee 2 mentions that customers are the most important during the development process. The more complex, the more important it is to involve customers. Because then, they experienced that customers are going to take control of a problem. But not every customer can participate. They must meet one of these elements: a customer must feel urgency, a customer must have the power to change anything within the organization, or must be convinced to solve the problem. It is important that there are no opponents in the innovation process. Interviewee 3 already mentioned that customers need training to become good at generating ideas. He thinks that their participation is the most appreciated between an idea and prototype, which is also mentioned by interviewee 5. Interviewee 5, thinks that customer involvement are less important during the launch stage. However interviewee 7 believes the launching stage is the most profitable stage for a company to use customers, because she believes you can involve all customers to create some 'support base'. Finally, interviewee 8 suggests using customers during the development. Also using them during the idea generation is very important.

So overall, the respondents have a different view on when to involve the customer. However, most of them feel that especially during the first stage it is important to involve them.

As a matter of fact, none of the interviewees have used the involvement of customers during a previous crisis.

6.4 Discussion

In this discussion, we will link the interviews with the literature review in order to notice any differences and similarities. This discussion will help in order to find an answer to the research question: "*Can companies use customer ideas to their benefit in times of crisis*".

On the first sub question: "*Are ideas needed in times of crisis*". All respondents answered very confidently that you need ideas in a crisis. They also believed that innovation is important during crises but also in normal or stable situations. This could also be seen on how they handled the crisis. They all believed they could improve their companies and they all did some improvements on their products or extended their market or adjusted their processes. However, when asking the question "*what kind of ideas are needed in times of a crisis*", the answers were very diverse. Some believed that one needs especially creative ideas (interviewee 7), while interviewee 3 said to use ideas which are already there, to use them first. Additionally, interviewee 1 said: "you always need ideas, but you don't need noncommittal ideas". All the others didn't have a specific opinion on this question. Based on the literature, we were unable to find a correct answer to this question. However, based on the perspective of interviewee 5, because of a bad idea, they were able to realize it to a successful idea which was in this case better than having no idea at all.

In the literature review, we made four key elements of a crisis based on definitions. These key elements were made in order to make links or connections with other topics, to counter literature gaps. 2 of the key elements were affirmed in the interviews. Interviewee 1 and 3 mentioned that corona had a large impact on their sector. While respondents 6 and 8 mentioned that because of

corona, there was a lot of uncertainty. On the other hand, interviewee 8 mentioned that during the crisis, they had more time to think of future directions. This is in contrast with one of the key elements that has been found characterizing a crisis. This element was time pressure. The other element 'threat' wasn't mentioned at all.

On the second sub question: "*Can customers generate these ideas?*". Three out of eight interviews said no because they do not generate according to the right criteria. Two of them mentioned that involving customers is important but they should be better used to get more information about them (interviewee 1 and 3). Moreover, seven out of eight respondents think involving customers is important. But almost all their ideas are coming from internally.

Previously, we discussed the impact of a crisis on market size. We can add to the literature that companies that offer tents are innovating in order to operate better after the crisis. During the crisis, there is no market for them. This is a contribution to crisis management because not every company innovates to survive a crisis. It could also be very interesting to do further research about which sectors could face similar situations. Additionally, we also saw during the interviews a new perspective about market potential that may contribute to customer behavior in times of crisis. In this criteria, the needs of customers must be met (Ebner et al., 2006). Interviewee 3 added to this that customers' needs are based on a pyramid of Maslow that works similarly. In the bottom layer, the focus will be on basic needs such as functionality and the upper layer will represent user experience.

Furthermore, highly novel ideas have a higher risk of getting rejected because they have an image of being risky and it is more complex to implement them as one needs more time, energy and support for it (Skerlavaj et al., 2014). As these ideas seem like an idea with higher chance to fail, we saw in the interviews some that actually did it and even entered a blue ocean with success. One of the interviewees created a blue ocean by offering sensible chocolate that fits into your letterbox. Also, respondent 7 established a blue ocean by merging with another company to target a new market segment namely, delicatessens. Another pattern that can be discussed is the fact that the 3 companies that achieved the highest results during the crisis, often do interviews or sales talk with their customers to understand them better. But during this crisis, they did not double check on customers to see if their preferences were still the same or have changed. They just go for it. However the same interviewees said that they noticed a change in customer behavior or in customer preferences.

One of the elements that have been discussed in the literature but can be contradicted because of the interviews is that firms in fast-changing environment are less likely to use market ideas. Some companies tried to reach out even more to their customers during the crisis. This was the case for interviewees 7 and 8. Interviewee 8 already mentioned that the current crisis gave them the opportunity to think about their directions. Also interviewee 8 reached out more to their customers. Especially for giving extra support to their customers in these dire times. Also respondents 1 to 3, are the consultancy firms, they had more jobs but did not used less or more end customers because of the crisis.

Lastly, according to the literature, when using no method is the worst case scenario, as it creates ideas with low novelty and low market potential (Chulvi et al., 2013). During the question what method they often used, we got the answer of using interviews multiple times. However, when going deeper into this, we noticed that with some respondents (5,6 and 8), the ideas coming from customers happen very spontaneously. This is especially the case for the tent industry. Most of the time they get ideas from customers when they are setting up or dismantling the tents. Despite the spontaneous ideas, they often lack the right criteria as has been discussed in the literature.

So to answer this research question, five out of eight respondents believe that involving customers may actually benefit in times of a crisis. This is very remarkable as none of them involved customers in a previous crisis.

7. Conclusion and limitations

During this study we were able to find very interesting insights. One of the main key elements that we found was that not every company innovates in order to survive a crisis. Some companies such as the tent industry, innovates in order to increase their performances when the pandemic is over. This is a very important contribution to crisis literature as it shows that crisis has a higher impact on the type of sector as we first thought. Also it would be interesting to do more research about it, see if other sectors such as: tourism, hotel and restaurants and potentially IT.

Another contribution to crisis management is that one of the four key elements which were discussed in the literature review, time pressure, was not experienced by every respondent. Some interviewees mentioned to even have more time during this crisis. Further research might indicate how much impact a customer may experience, and still be able to generate creative ideas. Also, from what moment on creativity of people has a negative effect because of time pressure.

Furthermore we saw a very interesting pattern of 3 respondents. Those interviewees, which had the highest success of their innovation during this crisis, had some things in common. First, they regularly do interviews or sales talks with their customers to find out their needs and wishes. Second, they all mentioned to experience a change in the behavior or preferences of their customers during this crisis. And third, during this crisis, none of them did a double check with customers, to find out if their innovations would still match the new needs of customers. Moreover, the result was that 3 of them entered a blue ocean. So for further research it would be interesting to find out if by entering a blue ocean during a crisis, the criteria based on market potential, are they less important? Even knowing that customer behavior and preferences are changed? Or do all 3 companies had just luck?

Also, during the interviews and field study, it has been shown that ideas are very important during a crisis. It turns out that even a bad idea can lead to a good idea, after evaluation. Moreover, a bad idea can lead to higher success than having no idea at all. So, to answer the research question: "*Can companies use customer ideas to their advantage in times of crisis*", five out of eight respondents believe that involving customers may benefit in times of a crisis. Although it is remarkable that almost every idea of the interviewees are coming from internally. Moreover, none of them involved customers in a previous crisis. But they all mentioned to involve customers more in a future crisis, except for one interviewee.

To conclude, the importance of this study can be shown by the fact that this research topic is very recent (corona crisis), yet it is still relevant, because firms can still adapt. Furthermore, a crisis is not a once in a lifetime experience, which makes it remarkably interesting since there was no valid answer to this research question yet.

One of the main limitations of this study is that companies do not show publicly if they use the ideas from customers. It would be interesting to do a study with companies which involved customers for ideas during a previous crisis and the current crisis. Would there be much differences? Another recommendation would be to find out when a crisis is globally spread, the involvement of customers becomes even more important or not.

Finally, some managerial implications is that managers must be more aware of the impact a crisis can have on a company. Not only does the environment of the company change, it also might change for customers. Therefore, they should implement a crisis team which includes external stakeholders including customers. Next, decide for your own company which kind of criteria and methods fits with your strategy before generating new ideas.

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Appendices

Interview guide

Intro:

1. Can you tell me more about your function in the company?
 - a. How is your function related to the generation of ideas?

Crisis:

2. Has the company experienced a crisis in the past (besides corona)?
 - a. What were the main challenges?
 - b. What did the company do to overcome this difficult time?
3. Is the current crisis different for the company than a previous crisis?
 - a. If yes, what are the main challenges for this crisis?
 - b. Through which actions do you think the company can overcome the corona crisis?
4. Is innovation important to survive a crisis?

Ideas:

5. Do you think ideas are needed in crises?
 - a. If yes, what kind of ideas?
6. What are the criteria for innovative ideas to you?
 - a. Does it differ from those in crisis?

Customer part:

7. Can customers generate innovative ideas (with the required criteria in mind)?
8. If we look beyond the generation of ideas, can customers play a role within the innovation process?
 - a. During which phase does the company benefit the most from the involvement with customers?
9. What are the disadvantages of involving customers during the innovation process?
10. From what moment on, did the company decide to involve customers?
 - a. For what reason?
11. During what kind of situations is the company more willing to use ideas from customers?
 - a. Is contact with the customer important during a crisis?
12. Can you explain the company's process or methods when involving customers for idea generation?
 - a. Do customers work in group or individually?
 - b. Is the process different when the company needs to get through a crisis?
13. Do you see a change in customer's behaviour in the process during a crisis?
14. Can you describe an example of an idea, you received from customers, that has been especially important during a crisis?

Ending:

15. What do you think the future will bring, will your company take a different approach for gathering ideas in the future during a new crisis?
 - a. What would be different?
16. Do you have any advice or highlights that you would like to mention about this topic?