"Innovation is not about creativity, it’s about discipline"
Uncovering the effects of shared leadership on disruptive innovation in international new ventures

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Date: 2018-05-23
Subject: International Business
Level: Degree of Bachelor
Course code: 2FE51E
Abstract
In recent years, start-ups and small to medium sized enterprises that operate globally from their inception have become commonplace. These companies often use shared leadership structures and aim to disrupt an existing market with a innovative product. This thesis intends to explore and understand the influence of shared leadership on disruptive innovation inside these international new ventures using a qualitative research approach, by gathering relevant theories of shared leadership, such as disruptive innovation and international new ventures and contrasting them in an abductive manner with the results of six interviews conducted with representatives of chosen start-ups. In these interviews the participants were questioned about shared leadership and disruptive innovation separately and try to integrate the results of shared leadership that relate to disruptive innovation in a positive or negative manner. Our findings suggest that creativity, efficiency, intrinsic motivation as well as cross-field knowledge have an incubative effect, while shared leadership itself, when managed poorly, can hamper disruptive innovation.

Keywords: Shared leadership; Disruptive innovation; International new ventures; Innovation process;

The quote in the title is owed to Irene Philipps, Director of Business Processes at Disruptive Technologies.
Acknowledgements

Twelve weeks ago, we started the final project of our Bachelor's programme in International Business with great motivation and curiosity. After countless hours of research, discussions, search for interview partners and writing texts, we were finally able to complete this bachelor thesis. Many people have helped us to master challenges and solve problems. They provided us with valuable information, motivated us or sharpened our focus in order not to lose sight of the goal. At this point we would like to take the opportunity to thank everyone who contributed to the successful completion of this bachelor thesis.

First of all, we would like to thank our six interview partners from the bottom of our hearts for taking the time to give us profound insights into their processes. We are very grateful that these interesting, enjoyable and informative conversations have been held, whether uncomplicated during the office hours or on a Saturday evening. These are Irene Philipps from Disruptive Technologies, Matthias Vanoni from Biowatch, Lelde Dalmane from Catchbox, Andrew Monk from ioLight, Marc Zünd from Vigilitech and a person who wants to remain anonymous. Our sincerest gratitude go to all of you!

A special thank you goes to our supervisor Niklas Ackerman, who gave us important inputs with his great experience, who always listened carefully and showed us the right way after initial difficulties. It was a very pleasant and instructive collaboration with you and we are thankful for your engagement and your constructive feedback. We would like to express our great appreciation to Clarinda Rodrigues, who showed us opportunities for improvement during the seminars and who met us with sympathy. Last but not least we would like to thank our opponents for the detailed feedback and that you have invested your time to refine our bachelor thesis.

Kalmar, Sweden, 23th May 2018

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1 Introduction

1.1 Background
In a highly globalized environment a significant amount of competition is caused by increased international trade (Dreher, 2006). This high competition brought forth the need and urgency for companies to develop further (Porter, 2008). Many firms focus on specializing either on cost optimization or strong innovation and technological advantage. This technological advantage is very hard to maintain. A reason for this is the faster pace of innovation cycles in technology development (Vincenti, 2018). André Loesekrug-Pietri, the mind behind the Joint European Disruptive Initiative (JEDI), strongly believes that in today’s business world time is of critical essence, so as to not let the European market fall behind other players such as the United States of America or China.

Over the past twenty years, a new form of organizations has emerged in the international market. These so-called international new ventures are small companies and start-ups that either already operate or intend to operate, internationally from their inception (Oviatt & McDougall, 1994). Some of these international new ventures try to gain market share by delivering innovative products that serve customers whose needs are not satisfied by the dominant competitors (Christensen, 1997). But what is innovation?

Innovation could be defined as a new product that is original and more effective that enters into a market or society (Frankelius, 2009). If one breaks down innovation into two dimensions, namely the technological and the market, distinguishing between existing or new, it is possible to create several categories of innovation (Lopez, 2015). Maybe one of the most influential terms for innovation, and by it’s inventor even hailed as the essential fact of capitalism, is creative destruction. It is a very radical form of innovation where established procedures are destroyed to create space for new ways of doing things. Firms that want to stay competitive and ahead of the competition need to embrace the concept of creative destruction. Any company that is not willing to change or innovate either by somehow reducing cost or improving their service/product is likely to fail in the marketplace (Schumpeter, 1942). Another one of these types of innovation is the disruptive innovation which presents a new technology in form of a product or service in an existing market (Christensen et al., 2015).

A great example of a disruptive product innovation came with the iPhone (Gilbert, 2017). In 2007 Apple launched the iconic iPhone. This ended the dominance of Nokia on the mobile phone market and can be seen as a milestone in the smartphone market. Dominant players in the smartphone market at the time were Blackberry and Motorola Q’s (Griffin, 2015). By creating a phone that also functions as a platform for internet access and served as an iPod, while only costing 100 US Dollar more than a regular iPod, the iPhone had a very strong value proposition. With increased wireless network
speeds and faster memory as well as processors, the iphone took the market by force and established itself as the dominant player for years to come.

Simultaneously to the globalization trend in the 50s researches began looking into another field of study, leadership theory. Leadership in this context can be defined as an influencing process between leaders and followers with the goal of achieving organizational objectives via change (Lussier & Achua, 2014). Early forms of leadership, such as the traits theory, mostly considered qualities that a person was born with as relevant for the success of a leader. In the following decades many more theories, e.g. behavioral leadership theory, about the character of a leader were created. However, most of these theories considered solely the individual and, by extension on vertical approaches on how to organize tasks (Northouse, 2001). What stood out among these various leadership style is that they did not focus on the team or group of co-workers. Some new approaches had to be developed to create a structural environment that could react to market trends much faster than the older hierarchical leadership theories.

One of these new approaches is called shared leadership. The concept questions the status quo of the individual leader perspective as it might present little information about informal leadership or situational factors (Pearce & Conger, 2003). Through this approach the team itself has become the center of attention of more recent research (Avolio et al., 1996). Shared leadership could therefore be described as a collaborative, emergent process of a group interaction in which members engage in peer leadership while also working together (Pearce & Conger, 2003). Teams that are given the necessary skills, resources, and authority to make decisions and take actions formerly reserved for management have shown to be able to cut costs, increase customer satisfaction, and improve quality (Janz, 1999). To sum up, shared leadership has been proven to increase team effectiveness. However, this approach is not without flaws. On a practical level, strongly hierarchical leaders will be tasked with creating less vertically structured organisations (Senge, 1996). Even though macro level leadership focuses on teamwork and collaboration, the media and society in certain countries still focus on these hero type leaders, e.g. Elon Musk, Jack Ma, Jeff Bezos, and their character instead of the entire team around them.

Ultimately, in a very fast pace world shared leadership styles offer a solution for companies to develop quick reaction times to the market. As has been established before these teams are usually more effective than their vertically structured counterparts (Janz, 1999). They are more capable of reacting to a world that is getting more complex everyday where a single hierarchical leader might not be able to keep track of the entire field of business that the team is in.
1.2 Problem discussion

1.2.2 The practical problem
In today's world, more and more companies are internationally oriented already at the time of their inception or shortly thereafter (Wessely, 2010). Although these international new ventures are spread globally and appear in every industry, these are mostly small- to medium sized enterprises and start-ups which are primarily technology-oriented. Hence, in addition to the international characteristic, the technological aspect often presents an additional challenge for a company's leadership approach (Cannone & Ughetto, 2014).

A Swiss IT company, as described by Künzle (2010), that operates in the field of disruptive innovation was looking for a new leadership model because its managers were overwhelmed with the complex project tasks. So the employees were no longer managed in a target-oriented manner, as the managers lost the overview. As a result, the company became inefficient and their hierarchical leadership model was too rigid to react to the ever-changing conditions. The management finally decided to change from a vertical management structure to a shared leadership structure. Consequently, employees were given more responsibility and integrated into the processes. In addition, support was provided to people with a high level of expertise but who had not previously held any management positions. The CEO describes this measure as the key to success and vital for the future of the company.

Although there are growing signs that this new leadership approaches will play an important role in the future, shared leadership is currently not a widespread phenomenon in practice (Kern, 2017). What are the reasons for this, apart from the fact that it is a newer approach and not all organizations are willing and able to make such a big transition? It may be linked to the implementation and managing of shared leadership, which can cause difficulties. Fitzsimons (2016) has, in recent years, observed a growing phenomenon. While many employees reacted sympathetically to the idea of a new leadership structure, the implementation was associated with greater challenges. The author regards the changed relationships between the employees as the greatest difficulty. The people must internalize that decisions are no longer made from above but as part of the group. Even with regards to bad events, everyone in the group is now responsible and no longer just the leader. For international new ventures, it is therefore a challenge to implement shared leadership in such a way that the employees feel comfortable with the new form of management in order to create a climate that is conducive for disruptive innovation. This requires a fundamental understanding of how shared leadership is linked to disruptive innovation.

1.2.1 The scientific research problem
Since the shared leadership approach is a relatively new phenomenon in contrast to the hierarchical and vertical leadership approach, comparatively little literature exists. Pearce & Conger (2003) emphasize that the topic has caused a sensation among researchers in recent years, and that there was a demand for new models from the
economy, but the understanding of these possibilities and dynamics conclude still relatively limited. Therefore, the knowledge about the topic is behind its possibilities.

Nevertheless, a spectrum of areas has been investigated so far. Most studies have dealt with the effects and consequences of shared leadership, with team efficiency being one of the best-studied categories (e.g. Avolio et al., 1996; Pearce & Sims, 2002; Mehra et al., 2006; Carson et al., 2007; Hoch et al., 2010). Further fields of the research are trust (e.g. Avolio et al., 1996; Boies et al., 2010; Small & Rentsch, 2010; Drescher et al., 2014; Liu et al., 2014), conflicts (Solansky, 2008; Gupta et al., 2010), group cohesion (Boies et al., 2010; Gupta et al., 2010; Sivasubramaniam et al., 2002), creativity (Serban & Roberts, 2016; Wu & Chen, 2018) and diversity (Gupta et al., 2010; Hoch et al., 2010; Muethel et al., 2012). Although many aspects of how shared leadership has an impact on the organization have been studied so far, little is known about the connection to innovation and in particular disruptive innovation.

As described in the background innovation is an important factor in staying competitive in the globalized economy. Pearce & Manz (2005) argue that self- and shared leadership are essential for companies that require repeating innovation with the goal of offering the best products and services to their customers. As soon as employees have the opportunity to assume responsibility themselves, attributes such as solving problems, creativity and innovation are encouraged.

What is the state of research on shared leadership in connection with innovation? One of the few studies published so far conducted a survey of 95 innovative teams in 2013. The results showed that the more the leadership was distributed, the innovation performance increased significantly. The study also provided information on the complexity of the tasks. The more challenging and difficult the assignment was, the more innovative the teams were when they were led according to the shared leadership approach. The opposite could be observed when the tasks were less complex (Mei & Wang, 2013). Künzle (2010) came to a similar conclusion and emphasizes that companies applying the shared leadership approach take more risks, but think more innovatively through the increased involvement of team members. This makes them more flexible, reactive and successful. The approach also pays off for complex tasks: Due to the different skills and specific expertise of the members, the team can solve such tasks more quickly.

In general it can be stated that although there are some studies on innovation in connection with shared leadership, there is no academic research on the specific topic of disruptive innovation in the same connection. The present bachelor thesis will therefore examine this research gap and contribute to a better understanding.
1.3 Problem definition

From the initial research it was established that there is little research and evidence regarding the relationship between shared leadership and disruptive innovation. The authors of this thesis firmly believe that the research topic also finds great applicability in the real business world as start-ups are always fighting to keep relevant and stay innovative in a disruptive way. When discussing the research question and how the thesis should be approached, the authors realized that a single research question would be sufficient and would give us a clear guideline on how to proceed during our research. We therefore present our main research question as follows.

**Research question**

After debating our problem we came up with the following research question:

> How does shared leadership influence disruptive innovation in International new ventures?

1.4 Purpose

The purpose of this thesis is to gain further insight into the relationship between shared leadership and disruptive innovation inside International new ventures. By gathering and exploring the outcomes of the implementation of shared leadership the consequences for disruptive innovation can be clearly studied. Furthermore, by finding the factors that foster disruptive innovation in those companies, it might then be possible to find a connection between shared leadership and said disruptive innovation. By using an exploratory approach the research topic is handled and gives insight into the factors that develop innovation and the outcomes of implementing shared leadership, and finally, show commonalities and relationships between the two.
1.5 Outline

Chapter 1

• Introduction
This chapter consists of the background related to the topic of this study, further elaborated in the problem discussion which also features the theoretical research gap. Furthermore, this chapter presents the research question and purpose of this study. Finally, this chapter culminates in the delimitation and outline of the study.

Chapter 2

• Literature review
The reader will gain knowledge of the relevant literature that concerns itself with the topic of this study which is crucial to understand the content and result of the qualitative data to be introduced later on. By presenting a conceptual framework this chapter will also clearly demonstrate the connection between the introduced themes.

Chapter 3

• Methodology
In this chapter the choice and motives for the methodology of this study will be presented with regards to their applicability to the research question.

Chapter 4

• Empirical findings
In this chapter of the study the reader will find the empirical findings in a way that clearly states the outcome of the interviews.

Chapter 5

• Analysis
The analysis takes a close look at the empirical findings of the study and compares it with the conceptual framework with a detailed analysis of the subject in the words of the authors.

Chapter 6

• Conclusion
In the conclusion chapter of this study a summary of the main arguments and implications regarding the theoretical and practical nature of the study can be found. As a result of this summarisation we will finally address the research question.
2 Literature Review

2.1 Shared Leadership
As in many areas of research, there are different interpretations of the definition of shared leadership. All definitions have in common that they define a dynamic process. The management functions and the influence are distributed among several people working towards a common goal. Pioneers in this area are Craig L. Pearce and Jay. A. Conger, which have defined shared leadership as follows: “A dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group or organizational goals or both” (Pearce & Conger, 2003, p. 1). Ensley et al. (2006) see this horizontal approach as a process in which leadership is done by the entire team, instead of a single designated individual. Finally, Carson et al. (2007) emphasize the dynamism and underlines that the origin of leadership influence is spread out among team members instead of being concentrated or focused on an individual. The author argues that teams with increased levels of shared leadership may even change the leadership over time.

The topic of leadership was first taken up by the French economist Jean Baptiste Say, who said that an entrepreneur must be capable of oversight and control (Say, 1832). Subsequently, the role of the leader and his relationship with the employees developed. This relation was clearly vertical and a possible mutual influence of the two stages was not considered at this time. After the end of the industrial revolution, the topic of leadership was discussed more widely and examined scientifically. The researchers agreed that clear top-down management leads to effective productivity (Pearce & Conger, 2003).

In the 20th century, concepts were gradually published that differed slightly from previous management models. Follet (1924) states that the subordinates should follow the person with the greatest experience in a certain field instead of a defined authority figure. Bowers & Seashore (1966) looked at insurance offices and were able to empirically prove that if subordinated employees influenced the leadership process it had a positive effect on the results of the organization. Afterwards, it took until the mid-1990s for the researchers to delve deeper into this alternative form of leadership. Avolio et al. (1996) found in their study that students considered themselves more efficient when leadership was evenly distributed across the teams. Since then, intensive research has been carried out on shared leadership and various publications on this topic have appeared (Pearce & Conger, 2003). In addition, further theories and models have developed in recent years, which are distinguished from the shared leadership approach in the following paragraph.

Emergent leadership is a theoretical basis that has had a great influence on the subsequent development of new models, but clearly differentiates itself from shared leadership. This principle is about the phenomenon of members of a team without a
leader appointing one to counter the issues that come with the lack of a leadership figure (Hollander, 1961). The same category includes the participatory leadership approach, in which employees can contribute to the decision-making process and influence it with their knowledge (Yukl, 2006). In both theories the structure is hierarchical, because ultimately the leader has the final vote. There are five forms in the literature with collectivist characteristics: team leadership, network leadership, complexity leadership, collective leadership and distributed leadership (Yammarino et al., 2012; Bolden, 2011). The latter is the most similar form of shared leadership. According to Fitzsimons et al. (2011) the only difference is that in the case of shared leadership, a formal manager can influence the decision-making process compared to distributed leadership. Several authors do not make a clear distinction and see the two forms as synonymous (Carson et al., 2007). The other forms mentioned above all differ in that there is no explicit need for shared leadership and that there is always the possibility that the leadership can be exercised by one person (Yammarino et al., 2012).

2.1.1 Concept of Shared Leadership in an Integrated Model

Locke (2003) sees the advantages of shared leadership, but when a model is implemented in practice, some problems arise. The author points out that, despite the modern concept, no successful company has so far been managed by a group instead of a CEO. Although the concept of Co-CEOs does exist, the author is convinced that in the long term no company can be successfully managed by two people with exactly the same power, because at a certain point there will be disagreements in some areas. Therefore, a person who has the final vote is always necessary. Another challenge he observed is the question of maximum output. In the best case, the people with the most knowledge have the most influence on the processes in a team. However, Seers et al. (2003) observed that individuals that are able to articulate themselves more easily often rise as leaders. This means that people who can express themselves well may have an excessive influence on decisions, although they do not have the most knowledge. For this reason, Mayo et al. (2003), Cox et al. (2003) and Locke (2003) propagate an integrated solution of shared leadership in a vertical organization. This can be explained by using the model below:
The shared leadership model on the left side shows the interaction between the subordinates. Each person is equally involved in the processes, share the same responsibility and distribute all information equally. The model on the right, introduced by Locke (2003), provides that shared leadership does not replace, but complements, the vertical leadership approach. Thus, a designated leader (often the person with the most knowledge) has the role of orchestrating the system and the final power of decision if the team can't agree on a solution. This makes the right model more effective than the left version.

Cox et al. (2003) have created a preliminary model for organizations and teams that develop new products (NPD) in order "to describe some of the variables that might affect the emergence of shared leadership in NPD teams and its impact on team outcomes" (Cox et al., 2003, p. 55). The first antecedent variable that influences shared leadership is the role of vertical leadership. A formally determined leader bears essential responsibility, such as the four following aspects:

- **Forming of the team:** In a first step, the appointed project manager takes over tasks such as the design of the team. This means that important points are clarified, for instance who is involved in a project, which person takes over which part, and how the required resources are secured. **Management of Boundary:** New product development teams are under great time pressure and must complete a task as successfully as possible. They are therefore dependent on a framework within which the shared management can develop and which is protected from external influences. The formal leader is responsible for this so-called boundary management. **Leadership Support:** As mentioned above, the shared leadership cannot be executed entirely without the use of vertical leadership. Therefore, it is important to consider how much vertical leadership is appropriate in which context. Pearce & Sims (2002), for example, found in their study that high-performing teams tend to focus on more shared leadership compared to vertical leadership and vice versa. **Maintance of Shared Leadership:** To promote shared
leadership, the leader must formulate the concept clearly and comprehensibly to all members. The goals have to be defined together and the performance has to be checked mutually. If required, training or coaching can be arranged. In this way, the new approach can develop further in a team.

The team characteristics are treated in the model as the next antecedent variable. Cox et al. (2003) describe five factors that could influence shared leadership: Proximity: This term is defined as "physical distance between the vertical leader and the team or between team members" (Cox et al., 2003, p. 60). Keller (1986) describes in his study, which investigated NPD teams, that a smaller physical distance improves team cohesion and makes collaboration easier. However, today's technological possibilities can mitigate this factor by allowing all members to work on a project at the same time. Size: Team size is an important factor that influences shared leadership. Dawson (1992) sees an increasing size of the team as a disadvantage for the effectiveness of a NPD. Pearce & Sims (2002) also see a negative correlation between the number of people in a team and its effectiveness. It can therefore be assumed that not a too large team is decisive for success. Ability: This term indicates the depth and breadth of the cumulative knowledge, competence and capabilities of new product development teams (Cox et al., 2003) It is expected that comprehensive knowledge and a balance of different skills within the team will lead to better implementation and execution of shared leadership. Diversity: Compared to proximity, this factor relates more to the individual and social differences between the team members. It is a complex construct in which the effects have not yet been fully examined by research. There are authors (e.g., Knight et al., 1999; Pfeffer, 1985) who have found negative effects of diversity among team members as well as scholars who observed no differences (e.g., Baugh & Graen, 1997; Elron, 1997). In a study on effectiveness and diversity, Watson et al. (1993) found that differences within the group disappear over time and effectiveness increases when the team has worked together over a longer period. Maturity: How well does a team work and harmonize together? How familiar are the members and how do interpersonal aspects affect the group? This question arises when talking about the term maturity. Cox et al. (2003) assume that shared leadership develops better in mature teams. However, this is not always an easy task, as team building takes a lot of time, which is often rare in NPD.

The model contains two additional moderator variables that influence the relationship between shared leadership and the team outcome. On the one hand, this is the interdependence of a task and, on the other hand, its complexity. A high degree of dependency (e.g. a lot of structure necessary to coordinate the tasks) and an increased level of complexity often occur in organizations and teams that develop new products (Kraut & Streeter, 1994). Cox et al. (2003) expect a positive impact of shared leadership on team results under these conditions. However, the authors also assume the opposite if the tasks are simple and independent of each other - i.e. shared leadership would have a negative correlation.
The last part of the model deals with dependent variables or the outcome of shared leadership. As mentioned in the background, the field of research is relatively new and most of the studies were not carried out until after the turn of the century. In the next section, the four most examined outcome variables are discussed in the context of innovation.

2.1.2 Shared Leadership in terms of innovation

Creativity
One of the first authors to associate shared leadership with innovation were Pearce & Manz (2005). They see shared leadership as a necessary means of ensuring long-term innovation. By involving the team members into the problem solving process and taking on responsibility, creativity is encouraged, which consequently leads to innovation. Hoch (2012) supports the findings of Pearce & Manz (2005) and states that a distribution of leadership among several people is conducive to the innovative behaviour of employees and the team. The author describes creativity as one of the main driving forces. Peter et al. (2015) found an improvement in innovative ability at both team and individual level when shared leadership was applied.

Team efficiency
The most studied topic in connection with shared leadership is team efficiency. Mei & Wang (2013) found a significant positive correlation between shared leadership and the innovation performance. The authors confirmed the assumption of Pearce & Conger (2003) that shared leadership is particularly efficient for complex tasks. Mehra (2006) compared the efficiency of shared leadership approaches with hierarchical forms. The results show that a horizontal approach does not necessarily mean better innovation performance. Rather, an important factor is that the right people with the specific knowledge are assigned to the right position in the company.

Trust
The implementation of shared leadership strengthens trust within the group (Small & Rensch, 2010). Drescher et al. (2014) explain this outcome by the gradually distribution of responsibilities within the team. In this way, the team members gain new experience from each other, which increases their understanding of the respective specialist knowledge. The result is a higher level of trust. The authors see trust as an important aspect for achieving higher team performance. Bergman et al. (2012) also confirm this trend and has found that there are fewer conflicts in teams with shared leadership as trust is enhanced.

Group cohesion
Group cohesion is defined as the commitment and interaction within a team. It is a social process that is influenced by many different factors (e.g. trust, relationships) (Beal et al., 2003). But how does shared leadership affect group cohesion within innovative teams? With the involvement of all employees, an increased understanding of the team's decision will be established. This leads to a greater consensus among
employees (Bergman et al., 2012). Balthazard et al. (2004) confirm this statement and sees target agreements and a constructive climate as the key to greater group cohesion. Through the implementation of shared leadership Peter et al. (2015) identified an improvement of the climate for innovative processes as the division of tasks was considered fairer and more meaningful. However, shared leadership can create role ambiguity if the boundaries are not clearly defined or specified by a leader. In this case, shared leadership has a negative impact on group cohesion (Gupta et al. 2010).

2.1.3 Criticism of Shared Leadership

Is shared leadership the all-purpose tool for all the leadership problems that arise in today's dynamic business world? Locke (2003) clearly contradicts this statement. The author argues that it would be wrong to expect the same leadership requirements in every area and industry. For instance, leadership in military, police and security services are different than leadership in the private sector. It therefore always depends on the context whether an implementation of shared leadership makes sense (Locke, 2003). In addition to the criticisms that the principles are difficult to implement in practice and can hardly work without the use of vertical leadership (e.g Mayo et al., 2003; Cox et al., 2003), there are also some studies that do not show significant effects due to the implementation of shared leadership:

Fausing et al. (2013) could not find any correlation between shared leadership and team performance. As a reason it is mentioned that it depends on the context in which shared leadership is examined. The study showed that teams responded negatively to the distribution of power with repetitive and simple work, while groups with complex tasks showed a higher output of performance and thus had a positive effect. These findings coincide with the metastudy by Mei & Wang (2013). Gupta et al. (2010) confirm the results of Fausing et al. (2013) since they could not prove any direct correlation between the distributed leadership and the output of the team. The authors found that conflict situations in teams where power is distributed have a very negative impact on performance. This is justified by the interpersonal differences that trigger an adverse dynamic within the team and that the problems may not be solved by a higher authority. Pearce & Wassenaar (2014) have highlighted five aspects in which shared leadership can have negative effects: “(1) insufficient time to develop shared leadership, (2) lack of openness to shared leadership, (3) insufficient knowledge, skills and abilities necessary for shared leadership, (4) goal misalignment between members of the group, (5) goal misalignment between the sub-unit and the organization” (Pearce & Wassenaar, 2014, p. 11). The stage in which the company finds itself also seems to be a critical factor. Ensley et al. (2006) observed that in the event of major structural changes in the company, the shared leadership approach is suboptimal and the vertical approach instead contributes more to effectiveness.
2.2 Innovation

Business today is defined by high competition stemming from globalization and deregulation of the economy, rapid product development cycles, emerging technology, and uncertain economic circumstances (Edison et al., 2013). Different industries have various approaches on how to counter this competition (Akman & Yilmaz, 2008; Congressional Budget Office, 1998). Romjin & Albaladejo (2002) argue that the software industry is particularly concerned by shortened product and technology life-cycles as it is very knowledge intensive and technology-driven. Overall, innovation could be the key success factor in an increasingly competitive, global market environment (Akman & Yilmaz, 2008).

Barehgheh et al. (2009) argue, that as business research becomes more inter- and multi-disciplinary there exists a need for a more combined and generic definition of the term innovation. Innovation has been studied intensely by various disciplines in the academic world (Kenny & Reedy, 2006) but there exists no generally accepted definition of innovation in the scientific world. The thorough examination is further hindered by the usage of the word innovation which is often used as a replacement or synonym for creativity, knowledge, or change (Crossan & Apaydin, 2010). The authors then go on to argue that their methodology is limited to descriptive instead of statistical methods in the analysis of the results. In itself this poses as a counter argument for the use of the comprehensive overview of innovation.

One of the most influencial researchers for the concept of innovation is J.A. Schumpeter. The author’s idea of innovation is a radical form that he calls “creative destruction” (Schumpeter, 1942, p. 82). The author argues that every single business strategy has it’s background in the frame of creative destruction whereby the revolution of the new comes from within and incessantly destroys the old. In essence, the author sees this innovation in the form of creative destruction as the very basis of capitalism. If searching for more recent sources that have the schumpeterian idea at their core, one only has to look as far as the current field of Entrepreneurial studies. The author himself describes with his theory the quintessential part of any modern entrepreneur and as such, sees the entrepreneur as the incubator for innovation (Nikoloski, 2016). It should be argued that innovation in the sense of the schumpeterian view is an economic concept rather than a technological one (Urabe, 1988).

To sum up Schumpeter’s view of innovation goes as follows:

"[...] the new commodity, the new technology, the new source of supply, the new type of organization (the largest-scale unit of control for instance)–[...] which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives."

(Schumpeter, 1942, p. 85)
Urabe (1988) sees innovation as a long and accruing process of various organizational decision-making processes that range from the phase of generating a new idea to the stage of implementation, instead of a one time phenomenon. The novel idea in the author’s view of innovation is characterised as the concept of a new customer need or a new way of production. Just as Schumpeter (1942), Urabe (1988) sees an entrepreneurial vision as one of the causes for innovation. The author argues that both minor and major changes belong to innovation. Major change is defined as radical innovation, and a cumulation of minor changes is described as incremental innovation. No matter how ingenious a technological invention may be, it does not categorize as innovation if it creates no added value or profit in the market economy (Urabe, 1988). Over the course of his contribution Urabe defines innovation as:

“Innovation consists of the generation of a new idea and its implementation into a new product, process or service, leading to the dynamic growth of the national economy and the increase of employment as well as to a creation of pure profit for the innovative business enterprise.” (Urabe, 1988, p. 3)

Other researchers concluded that the categorization of radical and incremental innovation is incomplete and does not suffice to accurately depict reality (Henderson & Clark, 1990). The authors add another definition of innovation to their framework, which is called “Architectural Innovation”. As the name suggests, architectural innovation concerns itself with a structural rather than a technological innovation of a product. With the framework of innovation contributed in the author’s paper, three of the four types of innovation in this thesis are already presented, which serves as a stepping stone to the framework that will ultimately be used. Modular innovation as defined by the authors changes a core concept inside a product without changing the overall structure of the product.

![Figure 2: Framework for defining innovation (Henderson & Clark, 1990)](image-url)
It is important to note that the way the authors perceived and defined the different terms of innovation only focuses on components of a product and the linkages of these core concepts between them. As such, radical and incremental innovation are extreme points in this framework (Henderson & Clark, 1990). Radical innovation introduces a new dominant design, meaning new set of core design concepts paired together in a new structure. Incremental innovation in this framework concerns itself with the refinement of the established design while the core design concepts and linkages between them remain the same. Finally, architectural innovation changes the way in which components are fit together to create the final product.

The authors focus on a product development approach of architectural innovation which does not encompass the entire description of the term. The framework is too technical in nature and ignores the economic dimension of innovation. Architectural innovation can also effectuate on an organizational level (Galunic & Eisenhardt, 2001) of multibusiness firms which restructure their resources (Eisenhardt & Brown, 1999; Galunic & Rodan, 1998; Henderson & Clark, 1990; Sanchez & Mahoney, 1996). As the framework presented by Henderson & Clark (1990) does not include the dimension of the existing or new markets, it cannot serve as a comprehensive and general approach to different forms of innovation on it’s own.

The idea of disruptive innovation as viewed by Christensen (1992) concentrates on disruptive technologies and how these new ones outpaced technologies that seemed superior in a market (Markides, 2005). Christensen et al. (2015) argue that there is a troubling concern with the definition of disruptive innovation, as this term is used too frequently and loosely and therefore has become conflated. The authors argue that it is important to have a clear definition and picture of disruptive innovation to be able to manage it properly. What can be described as disruptive in their eyes is “a process whereby a smaller company with fewer resources is able to successfully challenge established incumbent businesses” (Christensen et al., 2015, p. 4). Four different terms of innovation have now been defined in this thesis. By contrasting these four definitions a crude framework for visual context can be drawn that clearly shows the relationship between the separate terms and their key distinctions.

![Figure 3: Framework for the four types of innovation (Lopez, 2015)](image-url)
The new framework as seen in figure two summarizes the technological aspects of innovation into one dimension on the x-axis and the economical dimension in form of existing or new markets on the y-axis. According to Lopez (2015) Architectural Innovation therefore creates a new business unit or changes the organization in such a way that a new market may be reached. Radical innovation, according to the author, introduces a new technology or product that does not have an established market. Incremental Innovation in contrast still creates minor changes to an existing product in an established market. In this framework, disruptive innovation takes the place of modular innovation. The author sees disruptive innovation as a new technology or product in an existing market.

2.2.1 Disruptive Innovation
According to Christensen et al. (2015), disruption describes the act of a smaller company with less resources that is able to successfully contest established and dominant companies. As these dominant companies are focusing on improving their products for certain target segments, they neglect the interests of others at the lower end of the spectrum. These segments that get ignored are then served by disruptive entrants and their new products or services. Through that successful targeting these entrants then gain a footing in the market by offering to an overheard segment. Market leaders in a dominant position usually are too preoccupied with gaining a higher profitability with their more-demanding customer segments and do not react to the threat of these new entrants. As these entrants establish themselves with their low-end segments, they strive to move up in the market and deliver the quality that the customers of dominant market players need. All the while they still retain the key properties that were responsible for the initial success. Disruption then occurs when mainstream customers start switching over to the proposition of the entrants in numbers. For further understanding of the authors’ theory a detailed depiction has been added in the appendix.

The authors argue that they have observed four major parts in disruptive innovation theory:

1) Disruption is not a singular event but an ongoing process. When referring to a product or service at a specific point in time, rather than as an ongoing evolutionary process, the term “disruptive innovation” becomes misleading. Most innovations, whether they are disruptive or not, begin as an experiment in a small environment. New entrants which are disruptive do not only strive to get the product right but also try to perfect the business model. In case of success, they usually move towards the mainstream market and attack the dominant player’s market share and ultimately, profitability. Finally, as disruption does not take place in a single instant incumbent companies stay with their profitable old model instead of having to write off certain assets immediately and switch to the disruptive product or service.

2) Companies with a new disruptive product or service create business models that do not resemble those of dominant market players. By not targeting segments
that overlap with dominant competitors these disruptive companies avoid a product- or price war that they would most likely not be able to win if the dominant company fully committed its assets to this cause.

3) Disruptive innovations do not always create economic success. Too often researchers only concentrate on the results achieved, meaning that a company is disruptive only by achieving success. However, economic profit is not part of the definition of disruption and therefore not every disruptive innovation is lucrative, and not all achieving newcomers have a disruptive character.

4) Companies do not always be disruptive in every single action they take. Dominant companies need to be mindful not to be overzealous and disassemble an entire profitable business unit because of disruptive innovation taking place. To counter disruption effectively, they should focus on improving relationships with core customers while creating a division to seize the opportunities presented by the disruption.

After forty years of research in the field of disruption (e.g., Utterback & Abernathy, 1975; Abernathy & Clark, 1985; Tushman & Andersson, 1986; Christensen, 1992) it has reached a critical point of it’s overall trajectory. As mentioned before this topic has attracted interest from many scholars, practitioners as well as the general public (Hopp et al., 2018). The authors argue that there are two major concerns that threaten the established facts of the field:

1) The intellectual core of disruption research is assaulted and challenged by a vast amount of scientific criticism which ultimately threatens it's fundamental legitimacy as a field of study. As an example they argue, that the work of Christensen (1992, 1997, 2006) in the field of disruption research, which has been criticized for being conceptually ambiguous, containing analytical inconsistencies, missing supporting evidence as well as lacking predictive capabilities (e.g. Danneels, 2004; Markides, 2005; Yu & Hang, 2010; Lepore, 2014; King & Baatartogtokh, 2015). Researchers and practitioners have therefore raised doubts about the conclusiveness of the results of these studies.

2) The second important factor has already been mentioned before and is also part of Markides’ (2005) argumentation. The angle from which disruption has been studied has strayed away from technology management and has been broadened by other disciplines such as entrepreneurship, marketing, organization theory, economics and strategic management. This interdisciplinary research that was brought forth by merging knowledge out of separate fields of study has proven to be both a boon as well as a liability according to Hopp et al. (2018). On the one hand, the various areas of research have contributed to a deeper understanding of the complex phenomenon of disruption on different levels, ranging from a micro- to a macroview of the topic. On the other hand, these separate perspectives cannot be linked together, which leads to an incomplete and splintered understanding that inhibits crossdisciplinary research. As a result this might even mitigate the core understanding of disruption even further.
Hopp et al. (2018) go on to argue that this calls for integrative efforts to carefully analyze previous research and enable other scholars to both rediscover a shared identity, as well as, combining disconnected efforts of separate disciplinary perspectives and insights.

Despite the fact that current research deals with rather abstract preceding academic source material (e.g., Markides, 2005; Yu & Hang, 2010) on disruption theory, which focuses on specific limitations and remedies thereof, it is bold yet highly relevant and necessary. This argument is further underlined by Markides’ (2005) article “Disruptive Innovation: In Need of Better Theory” and Danneels’ (2004) “Disruptive Technology Reconsidered: A Critique and Research Agenda” and to this day these articles are still among the most relevant on the topic (Hopp et al., 2018). This showcases the dire need for further exploration of the topic to close unresolved research gaps.

The shortcomings in the state of current disruptive innovation research leads this thesis back to Christensen’s (1992; 1997; 2004) and Christensen et al.’s (2015) efforts to define the disruptive innovation and calls for an integrated form of his definition for further usage in the remainder of this thesis. The authors argued in a rather similar way three years prior to the publication of Hopp et al. (2018). According to Christensen et al. (2015) the theory’s key arguments were extensively misinterpreted and were therefore frequently misused. However, the authors state that essential, more detailed contributions over the past 20 years were overshadowed by the initial formulation of theory. Therefore, readers should apply caution when criticizing the theory as some shortcomings may already have been addressed in further research. Another factor, according to the authors, is the uninformed use of the terminology by people that did not concern themselves closely with the topic of disruptive innovation. But in this usage lies the problem as described by Hopp et al. (2018).

As mentioned further above Christensen (1992; 1997; 2004) shows certain analytical inconsistencies (Christensen et al., 2015). According to the authors, a great example of such a flaw is the argument that disruptive companies are smaller and usually have less resources than incumbent companies. The authors argue that this fact does not hold up with examples such as the introduction of the iPhone. Apple was not an underdog but revolutionized the phone market with it’s new smartphone. The dimension of being the dominant force in a market while simultaneously being the agent of disruptive innovation has not yet been explored. Therefore, the authors themselves argue that there needs to be significantly more dedication to the research field of disruptive innovation.
2.3 International New Ventures

The new and growing phenomenon is the establishment of new ventures that are international from the beginning, so called international new ventures (INV) (Oviatt & McDougall, 1994). According to the authors, some of these sources have shown that these ventures establish because entrepreneurs with vast international experience and alertness are able to coordinate resources over multiple countries to satisfy the demand of markets that are international in nature (Coviello & Munro, 1992; Hoy et al., 1992; Oviatt & McDougall, 1994; McDougall et al. 1994; Ray, 1989). Other researchers raised the point that the success of international new ventures might depend on the initial intent of having an international firm from the beginning, an innovative product or service that is marketed through a strong network with a focus on international sales growth (Ganitsky, 1989; Jolly et al., 1992; McDougall et al., 1994).

Oviatt & McDougall (1994) see the purpose of their paper in the definition and description of the phenomenon of these international new ventures in order to present a framework describing how international new ventures fit within the theory of multinational enterprises (MNE). The authors do not want to add descriptions of particular international new ventures into their work. The aspiration is a well-delineated, theoretical framework that would be able to unify, inspire and lead research in the area.

The authors define international new ventures as “a business organization that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries” (Oviatt & McDougall, 1994, p. 49). One of the important factors is on the age of firms at which they become international and not their size. Contrary to organizations that develop through incremental steps from a domestic firm to a MNE, new ventures already start with an international strategy from the day of their conception. Surprisingly, these INVs are not required to own foreign assets. As a result the definition of the international new venture focuses on value added instead of assets owned (Casson, 1982). Oviatt & McDougall (1994) argue that the fact that international new ventures are international from inception suggests that a specific point in time must be chosen at which the inception takes place. Vesper (1990) argues that there can be no final solution to this issue as the emergence of a venture is a process that is spread over time. Researchers should therefore rely on clear resource commitments for the sake of establishing a point of inception (Oviatt & McDougall, 1994). The authors argue, that if new ventures do not yet have any sales because a product or service is still in development, there must be a clear commitment and intent to sell the output in several countries after finalizing the product.

2.4 Conceptual framework

According to the literature review, shared leadership was presented as a new concept that can be used as a supplement to existing hierarchical leadership models in companies. Although it is a relatively under-explored area, scholars have identified so far a connection between shared leadership and creativity, team efficiency, trust and group cohesion. Since several studies have described the use of shared leadership in
highly complex tasks as beneficial, the authors of this bachelor thesis suggest that there might be also a linkage between the outcomes of shared leadership and a particular form of innovation – the disruptive innovation. In order to verify this assumption and to obtain new information in this field, the investigation is carried out using an explorative approach by linking influences of disruptive innovation with the previously discussed outcomes. This investigation takes place within the context of international new ventures.

The conceptual framework below shows the connections explained above and provides the basis of the exploratory approach. The upper half shows that the independent variable shared leadership affect the output variables, creativity, team efficiency, trust and group cohesion. The lower half of the model indicates that, based on our assumption, these variables should further influence disruptive innovation.
3 Methodology

3.1 Research approach
Deduction, induction or abduction - in scientific research these three approaches exist to explain the connection between theory and empirical foundations (Bryman, 2012). According to the author, the deductive approach, also called top-down method, stands for a linear process in which a hypothesis is derived from a scientist on the basis of existing literature and theoretical considerations. This is followed by an empirical study of the hypothesis. For this purpose, data is collected in a specific area and the assumption is finally confirmed or rejected. Once the hypothesis is verified, the theory will be revised. The author argues that this concept is often used in quantitative research. The inductive approach, also called bottom-up method, starts from the opposing alternative. Based on observations, patterns and regularities are searched which can explain a certain phenomenon. The aim is to present a clear picture of reality and to be able to establish a universally valid theory. The scientist formulates therefore a hypothesis from the largest possible number of individual observations (Lodico et al., 2006). According to Dudovskiy (2018) this approach is attributed more to qualitative research.

For the present thesis, which deals with a potentially connection between shared leadership and disruptive innovation, an explorative approach was chosen. The reason for this selection is the limited availability of valid theoretical principles in this area. Although there is a solid foundation of literature for shared leadership, the relationship to disruptive innovation has not yet been proven in any study. As a result, a deductive approach would not be appropriate because there is too little evidence of the influence. The inductive approach can also be excluded, since the authors of this bachelor thesis have not yet been able to present enough empirical observations in this field and do not want to neglect the findings to date. The abductive method was therefore chosen because it combines specifications of both approaches (Alvesson & Sköldberg, 2009). However, the definition of abduction as a simple combination would describe the method too unbalanced, since continuous further development takes place during the process. New findings are directly incorporated into the project and analysed on both an empirical and a theoretical level. As a result, the corresponding parts are adapted and extended. Through this pragmatic approach, the limitations of a deductive and inductive approach, which have proven to be linear and rigid concepts, can be eliminated (Bryman & Bell, 2015). Abduction can therefore be described as an interplay between the two sides, which gradually accompanies and influences the research process (Alvesson & Sköldberg, 2009). Through the chosen approach new insights and aspects, which are gained during the data generation process, will be implemented in the present work. Thus, the authors of this bachelor thesis see the abductive method as the most suitable research approach.
3.2 Research method
The selection of the most appropriate research method is a decisive factor in answering the research question (Kumar, 2014). A distinction, according to the author, is made between two main types - qualitative and quantitative - and a mixture of both. The primary difference between the three different approaches is the degree of the given structure. While the quantitative method follows a clearly defined procedure and the investigation is conducted within a given framework, the qualitative approach is more flexible and open, as it is only restricted by a rough thematic guideline. The mixed approach is a combined and semiflexible process that takes aspects of both types into account depending on the intended use. While the focus in a quantitative procedure is on a larger number of respondents from a representative sample, the qualitative side concentrates on fewer cases with people who have in-depth knowledge of the respective topic.

In the present work a standardization of the framework is to be prevented so that the explorative approach can be applied as well as possible. The qualitative method was therefore chosen because it provides a comprehensive picture and in-depth information thanks to the respondents' unlimited answer options. The authors will specifically interview appropriate companies and individuals who have come into direct contact with shared leadership and are active in the field of disruptive innovation. In this way, the authors expect that they can best contribute to the initial body of research. Another reason for choosing this research method is the complexity and unexplored nature of the topic. The ability to ask specific follow-up questions can increase understanding and reduce complexity.

Denscombe (2010) emphasises that the data obtained must be processed in order to enable systematic analysis. In an effective application of the qualitative method, the raw data is transcribed in order to facilitate the search, enable a comparison of the data and make meaningful statements. This reveals a disadvantage of the method, as the preparation of the raw data can be very time-consuming. According to Bryman (2012) another challenge that can emanate from the qualitative approach is the problematic nature of replicate a research due to the lack of a clearly defined structure. In addition it is also difficult to make a general and representative assumption based on the results. The authors of this bachelor thesis are aware of these challenges and limitations. Nevertheless, the positive aspects of qualitative data collection predominate.

3.3 Research design
According to Kerlinger (1986), the research design "is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or programme of the research.”(p.279). Several different designs can be used in qualitative research, such as case study, oral history, focus groups, participant observation, holistic research, community discussion forums or a reflective journal log. However, a clear distinction between qualitative and quantitative is not useful, since many qualitative designs are also used in quantitative studies.
(Kumar, 2014). In the evaluation of the different study designs, a case study proved to be the most suitable variant for the present bachelor thesis. This selection can be justified by several arguments: On the one hand, Yin (2014) emphasizes that a case study is ideal if the research question is "How" or "Why". This prerequisite is fulfilled since it is asked how two variables influence each other. On the other hand, Kumar (2014) sees a case study as helpful if little research has been done in the investigated area. This factor also applies to this work. In addition, the case study offers a flexible and unlimited instrument for data collection and analysis, which can be beneficial when using an exploratory approach.

3.3.1 Comparative case-study
To find out how shared leadership has an impact on disruptive innovation, a comparative case-study is conducted. This means that patterns, similarities and differences are searched within several cases (Goodrick, 2014). To achieve this goal, the three variables "shared leadership", "disruptive innovation" and "international new ventures", which are part of the research question, are considered separately in the empirical findings and analysed in order to be able to compare the different cases. This makes a comprehensive investigation possible and it is easier to get an overview and consequently find an answer to the research question.

3.3.2 Purposive Sampling
There are several techniques that can be used to determine the sample. As a first step, it must be decided whether a probability selection or a non-probability selection should be made. The probability sample is based on the statistical theory, which says that a randomly drawn selection is the best way to obtain a representative sample that is not influenced by the researcher (Denscombe, 2010). In the case of an explorative approach, the author suggests a nonprobability selection because this instrument deliberately shortlists people according to their specific know-how or company based on certain criteria. Within this category there are different methods such as quota selection, purposive sampling, theoretical selection, snowball selection and convenient sampling.

As shared leadership is a newer phenomenon, the authors of this bachelor thesis depend on practitioners and companies who have already gained experience in this area. In addition, the variables "disruptive innovation" and "international new venture" must be addressed. The focus of the sample lies on start-ups, as they almost naturally meet the selection criteria. However, this is not an exclusion criterion but serves as an orientation aid. Based on a need for a targeted search, the method of purposive sampling was used in this work. With this principle, people and companies are deliberately sought that are relevant to the desired topic and have in-depth knowledge. This procedure ensures that all important factors of the topic are taken into account (Denscombe, 2010). The companies and persons examined in this work must therefore meet the following criteria:

The company must:

1.) have shared leadership within the organization
2.) have a disruptive innovative product
3.) be an international new venture by definition

The interview partner must:
1.) be familiar with the disruptive innovation process
2.) have knowledge of the shared leadership approach

3.3.3 Cases
The following section introduces the companies that have been selected on the basis of the above defined criteria. In addition, the persons with whom the interview was conducted and their position in the company are introduced. All interviews were done face-to-face via Skype and other Voice over IP-tools (VoIP) and took place between the 3rd and the 7th of May 2018.

Disruptive Technologies
Disruptive Technologies was founded in 2013 and develops solutions for the Internet of Things (IoT) including a unique mini-sensor. The company operates fully internationally and does not have an organizational chart because the entire firm is still structured as a project team. Therefore, all employees are specialists in their specific field. Irene Philipps is the director of business processes and joined Disruptive Technologies in August of 2017. This position encompasses the responsibility for all non-technology-activities inside the company, which are legal, human resources and the internal structures, communication, operations and process improvement. She is therefore very familiar with the leadership model and the activities inside the company.

Biowatch
Biowatch is a start-up company specializing in the development of a unique biometric identification system, photographing vein patterns, that can be used in conjunction with a watch. The organisation, which was founded in 2015, is very horizontally organised and currently operates in the main markets of France and Switzerland. Matthias Vanoni, is the CEO and co-founder of Biowatch. He has a six year background in the military, dealing with extremely hierarchical structures in place, and is still holding the rank of captain inside the French Gendarmerie. As Vanoni holds a Ph.D. in vein biometrics he is a proven specialist in this field.

Catchbox
In 2013, the first microphone that can be thrown and is called Catchbox was founded by a Finnish start-up. The big advantage of the small square cube is the soft surface that protects the device from damage and the wireless transmission allows voices to be transferred from the audience. The company supplies its products to over 35 countries and has a horizontal structure with teams in various areas and on different continents. Lelde Dalmane is the content marketing manager at Catchbox and joined the team in September 2017. Her main tasks focus around content - starting from everything inside the company and various places outside the company such as the internet, print media
and radio. Due to the flat structures Dalmane is well informed about the processes within the company.

**ioLight**

IoLight has developed the world’s first portable high resolution digital microscope. It creates beautiful pictures of animal and plant cells and displays them directly onto tablet or mobile phone. The company, which exists since 2014, consists of the two founders who share the management. Due to the economies of scale, the start-up has been internationally oriented right from the start. Andrew Monk, one of the co-founders, is a scientist with a master’s degree in physics from the University of Oxford with vast experience in technology marketing. Monk describes himself as a typical entrepreneur that knows something about everything but a lot about nothing. His experience in working with venture capital and leading entrepreneurship lectures at University gave him a solid skill set to develop a start-up with.

**Vigilitech**

Vigilitech is a start-up founded by students of the Swiss Federal Institute of Technology in Zurich. They developed a system that helps researchers monitor vital physiological parameters non-invasively during surgical interventions of mice. As the company currently consists of only five people, a horizontal management approach was chosen. Due to the worldwide demand for a solution in this area, the intention is clearly internationally oriented. Marc Zünd is a PhD candidate in the field of neuroscience and the CEO of Vigilitech. He works on administrative tasks and social networking as well as searching for funding of the project.

**Happy Patients**

This company wishes to remain anonymous, so a fictitious company name was given. The firm is based in the medtech sector and operates internationally. Happy Patients has chosen a very horizontal approach as its organisational structure. Adam Norman (fictitious person) works as the COO of this company and has prior experience working in a similar sector but for a much bigger company that works with very hierarchical structures.

### 3.4 Data collection

Any given thesis or paper comes to the point where authors have to start searching for data as this is the key activity to any (Bryman, 2012). According to the author certain methods need a more structured approach to data collection. In such a case the researcher plans the general limitations of what he or she needs to find out and creates appropriate research instruments that are implemented to find out what needs to be known. Research with a more exploratory approach has a tendency to be less structured to allow for ambiguity in the findings. There are two types of data: quantitative data, which is measured in numerical values and qualitative data that covers anything but specific numerical values (Merriam & Tisdell, 2015). This data, regardless of what type it belongs to is gathered in the form of primary and/or secondary data (Bryman, 2012).
3.4.1 Primary data
Primary data is data that is collected using measures, such as interviews, surveys and laboratory experiments by the researcher directly (Gauri & Grønhaug, 2010). For qualitative research, the most frequently used primary data gathering method is interviews. According to Merriam & Tisdell (2015) interviews give very in-depth information about a person such as behavioral patterns, emotions, and the way in which the surroundings are perceived. The data gathered through interviews are often considered to be more closely related to the research purpose and questions (Gauri & Grønhaug, 2010).

As this thesis uses a qualitative approach to explore the given research question, primary data will be used for the analysis. Because of the exploratory nature, interviews will be conducted to gather the necessary primary data that is relevant for the study. Interviews in particular should prove beneficial as the abductive approach combines both deductive and inductive elements. By collecting and summarizing theory on our chosen topic the authors of this thesis gain a clear view and are able to assume a certain outcome to the results of these interviews. By contrasting the results of the interview as well as allowing for a certain degree of ambiguity while conducting them the aim is to nullify any biases towards the results that the authors of this thesis want to gather and gain insight into how shared leadership can influence disruptive innovation in these international new ventures.

3.4.2 Secondary data
Data that belongs in the secondary category only differs in one key aspect from primary data (Gauri & Grønhaug, 2010). The data was gathered by other researchers and may include books, research journals, and articles. Secondary data only played a part in the preselection criteria for the interview partners. According to information found on company homepages and start-up ranking websites possible partners were gathered for the study.

3.4.3 Structure of the interview
An interview can be structured in three different ways: structured, semi-structured, or unstructured (Denscombe, 2010). Structured interviews are very strict where the interviewer exerts high control over the participants. In such a case the questions are already set in advance and there is little demand for ambiguity. A structured interview is often set up like a survey with pre-made questions that require a simple answer from the interviewee (Merriam & Tisdell, 2015). In a semi-structured interview there is less control over the specific issues that are discussed and the interviewer is more concerned with guiding the interview along a red thread that will lead to answering the research question. The topics of discussion are still predetermined and some overarching questions are established before conducting the interview to create a prearranged list of issues that need to be addressed. In contrast, unstructured interviews put an absolute emphasis on the interviewee’s thoughts. The researcher in this instance has to stay as unintrusive as possible.
For the interviews in this thesis it would not make sense to choose a structured approach as the pre-made questions in the interview do not make it possible to ask any follow up as well as changing the order of questioning. As this completely eliminates the possibility of diverse, comprehensive answers and takes away the interviewee’s chance to give further explanations to certain answers, this approach does not make sense. Where the structured interview is on one end of the structural spectrum, the unstructured is on the other. Unstructured interviews serve a very specific purpose and are very beneficial for inductive research (Bryman, 2012). They allow the interviewee complete freedom of answering and constitute an almost absolute loss of control from the side of the interviewer. This does not correspond well with the specific wording of the given research question. Even though this thesis has an exploratory character, an unstructured interview would be the wrong approach to answer the research question in an abductive manner. Semi-structured interviews offer a valid solution as the interviewer has a clear list of issues and questions that should be addressed (Denscombe, 2010). Through this process it is possible to change the order of topics and let an interviewee develop ideas more widely, even if those answers switch from one topic into another. This approach leads to more open-ended answers, and leaves a higher emphasis on the interviewee developing and focusing on points of interest. The semi-structured interviews were chosen because of the exploratory nature of this thesis. When using an abductive approach semi-structured interviews give interviewees the freedom to explore new findings more liberally than in a structured interview. As we expect to receive answers that are not covered in our theory, we allow interviewees to explain these answers further by using a semi-structured interview.

According to Denscombe (2010) the face-to-face interview is the most popular choice for collecting primary data. It is a meeting between one researcher and one informant. Another form is a interview that is performed with groups. Several interviewees answer the questions together with a researcher. Focus groups present a different option for gathering primary data. These focus groups consist of minor groups of interviewees that are brought together to explore attitudes, perceptions, emotions and insights about a given topic.

Group interviews have a clear disadvantage in that the expressed opinions of certain interviewees is influenced by the presence of other people (Denscombe, 2010). According to the author, the social dynamics inside an interview group might skew the results and create a problem of reliability because feelings and attitudes are not expressed truthfully. The answers of the interviewees might not be consistent with their own beliefs and therefore influence the gathered data in an incorrect manner. Focus groups are a useful tool for ascertaining the extent to which there are shared beliefs and emotions among a specific group of people towards a given topic. Focus groups could be used as an extension of the group interviews where each company could be seen as an individual focus group. However, as there is not a specific feeling to be gauged in this thesis there is no clear need for the building of focus groups. In addition, the negative influences of the group interview would get carried over into the focus groups.
Face-to-face interviews are simple to organize and the opinions expressed during the interview can be linked to a clear person in the organization. The intimate setting creates a secure environment in which the interviewees can anonymously respond to the question without fearing any forms of repercussion and thus eliminating any biases inside our primary data. Face-to-face interviews are also easy to conduct as the interviewer only needs to moderate, understand and interrogate one person. The author argues that this translates over into transcribing the interview which becomes far simpler as less people are involved. In this thesis one interviewee for each company was interviewed. The sample should be sufficient as the interviewed people are in key positions inside the companies.

3.5 Operationalisation
Before an interview is conducted it is beneficial to develop a script that guides the interviewer in the process (Jacob & Furgerson, 2012). To keep a clear view of the topic and to be able to conduct the interview the authors argue to create a literature review. In the operationalisation part the theoretical framework that is based on the literature review subsequently needs to define the theoretical concepts in an effort to link them to the real world through abstract terms (Yates, 2003).

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Estimated Amount of Interview Questions</th>
<th>Reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Operations</td>
<td>1-2</td>
<td>This section provides a general overview of the interviewee and the chosen company. The respondents are required to give a brief introduction of themselves as well as their company. For ethical reasons the respondents are given the choice to remain anonymous.</td>
</tr>
<tr>
<td>Shared Leadership inside the company</td>
<td>4-6</td>
<td>In order to understand the concept of shared leadership, the companies were asked about the general approach of leadership inside the company. A follow-up is planned in order to understand how shared leadership is implemented and the effects thereof. Shared leadership is referred to as horizontal or flat organizational structures, because certain interviewees might not be familiar with shared leadership.</td>
</tr>
<tr>
<td>Disruptive innovation</td>
<td>4-6</td>
<td>To gain a clear understanding of the innovation process inside the company, disruptive product innovation will be introduced and explored as to how the innovation process is organized. Disruptive innovation is initially referred to as</td>
</tr>
</tbody>
</table>
the idea to understand where the innovation process for these companies began. After the initial idea has been discussed disruptive innovation is only referred to as a process.

<table>
<thead>
<tr>
<th>International New Venture</th>
<th>2-3</th>
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<tbody>
<tr>
<td>To see how being an international new venture had certain requirements on design choices as well as the influence of the international new venture aspect on the organisational structure. The term international new ventures will not be used instead the international context of a company in general will be discussed.</td>
<td></td>
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Table 1: Operationalisation (own sources)

3.6 Method of data analysis

In general, data analysis is used to extract a value from the existing raw data. It is a complex interplay that varies between theoretical constructs, practical experience, description and interpretation (Merriam & Tisdell, 2016). With a qualitative approach an enormous amount of data is generated. The question therefore arises how to deal with this circumstance so that a structure can be carried out and the data can be used to answer the research question (Bryman, 2012). Merriam & Tisdell (2016) propose an analysis that takes place during data collection and is carried out continuously. This prevents important aspects from being lost in the vast amount of data and the statements can be made precisely because the interviewee can be asked immediately if necessary. It may be necessary to aggregate, categorize and restructure the data in order to perform a good analysis (Saunders et al., 2009).

Through the explorative approach, it was a challenging task for the authors to search for patterns and similarities between the companies and statements of the people during the interviews. Interesting and relevant parts were marked with a time stamp so that this place could be found again as fast as possible. To facilitate the task in general, the questions were roughly divided into the three parts shared leadership, disruptive innovation and international new ventures as described in the operationalization section. This enabled a quick summary and overview of all interviews. Subsequently, the data were compared with the conceptual framework to detect deviations and make adjustments to the theory if necessary. This procedure ultimately led to conclusions being drawn on the basis of the data.

3.7 Quality of research

3.7.1 Validity

Validity reflects the amount to which data that is gathered for a study is accurate and appropriate (Denscombe, 2010). The researchers constantly need to be alert and ask themselves if the data collection instrument, measures what it was designed to, in order to measure the correct parameters (Lodico et al., 2006). The authors argue that when using a test or other instrument, validity is the most important characteristic that this
instrument should have. Validity is most commonly established using an in-depth review of the chosen instrument. As there are various types of qualitative research, there should be differences in the criteria for validity as well (Merriam & Tisdell, 2015). According to Maxwell (2013) the term validity does not imply that there exists an objective truth to which statements can be compared.

When collecting interview data, researchers should always ask themselves: Is the informant telling the truth and how do I know (Denscombe, 2010)? As soon as interviewers are gathering data that is intangible and complex the task of validating becomes considerably more difficult. The author argues that there is no absolute way to verify what an informant tells the researcher about their thoughts and feelings. Nonetheless, there are certain practical measures that researchers can use to make sure that the information they are getting is credible. However, with any unspecific information or raw data it is important to say that these methods are not foolproof for detecting false statements given during interviews. The following checks help a researcher to gain greater confidence in the gathered data, in the knowledge that some measures were taken to ensure that the data is valid.

The researcher should always make sure to check the gathered data with other sources on the topic (Denscombe, 2010). Such a method that cross-checks multiple sources of data is called triangulation. To increase the validity of this thesis, through the use of triangulation, the authors cross referenced the interviews with each other in order to detect trends that increase the confidence in the data. Respondent validation is the act of checking the transcript with the interviewee to make sure the answers were accurate (Silverman, 2010). This approach was a key aspect to ensure that any misconceptions and misunderstandings were eradicated. The fact that the connection between shared leadership and disruptive innovation inside international new ventures has not received any substantial attention from researchers makes the exploration of this topic even more susceptible to validity issues. Through the finding of patterns and checking up with interviewees after transcribing the interview, data and the research in general received a sufficient level of validity. Checking the plausibility of the data by critically questioning the informant and if that person is capable of giving authoritative answers on the topic of conversation is another form of securing the validity of the research (Denscombe, 2010). To ensure proper validity, the interviews for this thesis were conducted with key people inside different organisations that have experience with the organisational structure and shared leadership as well as knowledge about the disruptive innovation of the product. However, reality can never truly be captured (Maxwell, 2013).

3.7.2 Reliability

Reliability represents the extent to which findings that were made in the research can be replicated (Merriam & Tisdell, 2015). In the field of social sciences reliability becomes a substantial problem as human behavior is erratic and cannot be predicted very easily. According to the authors, reliability in a specific research design is based on the assumption that there is one reality and that studying it repeatedly will yield the same
outcomes. This is a core concept in any classic empirical research. However, qualitative research does not isolate human behavior when conducting research. According to Denscombe (2010), a check on reliability calls for an explicit account of the methods, analysis and decision-making and explain to readers in as much detail as possible how the study was conducted and what specific actions led to particular conclusions.

In order to adhere to the standards set by other researchers and to guarantee the reliability of this thesis an interview guideline has been added in the appendix. As this study was more exploratory in nature, all participants answered questions around the same key topics. Another argument for the reliability of this thesis is the sample, which was specifically selected along the key criteria of shared leadership, disruptive innovation and international new ventures. This sample therefore provides a more reliable research. Finally, a thorough description of the methodology of this thesis underlines the argument for the reliability. All key aspect have been defined, outlined, and clear arguments have been provided why certain aspect are done in a specific way - all in an effort to give the reader a clear understanding of how the research data was gathered, documented, and interpreted.

3.8 Ethical considerations
In research, data are often collected in the context of people. This automatically raises the question of how these people are treated by the researchers. In this case, ethical concerns come into play. For example, what needs to be considered to ensure a person’s integrity (Oliver, 2003)? Denscombe (2010, p.7) stresses that ethical considerations are not a choice. They are an essential part of any credible research. Although potentially promising and enlightening results can be achieved, this does not mean that a researcher has freedom of action. The author has therefore established four basic principles which must be observed in research:

1. "Participants’ interests should be protected”
2. "Participation should be voluntary and based on informed consent”
3. "Researchers should operate in an open and honest manner with respect to the investigation”
4. "Research should comply with the laws of the land”

This bachelor thesis is based on the above principles. To ensure voluntary participation in this study, the communication with the companies was open and transparent. In order to achieve this intention, the topic and the purpose of the investigation were explained to the contact partners and it was pointed out that all information will be treated anonymously if requested. The interests of the interview partners were taken into account and protected at all times during the data collection. This procedure made it possible to treat sensitive data with the necessary care and to comply with the principles of research ethics.
4 Empirical Findings

4.1 Cases

The companies that took part in this study all developed a disruptive product innovation in an organisation with horizontal hierarchy structures, and have made that product available to an international audience or intend to do so in the near future. The participants have their operations and development in Europe while selling internationally.

Disruptive Technologies

Disruptive Technologies, is a decentralized company that over the past five years developed a smart micro-sensor and is now in the process of scaling up the production as well as restructuring the organisation. The company is headquartered in Norway and has organisational structures that allow for virtual collaboration. In 2013, a group of people coming out of the semiconductor industry, started the company. The product they provide is a complete Internet of Things solution (IoT) based on a smart micro-sensor that reacts when pressed, recognises proximity, and measures the temperature in the size of a keyboard key with a battery live of more than 15 years. This product is not industry specific as the IoT is supposed to encompass every aspect of human life. The company is now in the process of launching the product to market while significant parts of the company are still concerned with the innovation process. Because of this, the firm is still organized like a project group but is facing the task of industrialising the unit production.

Biowatch

In 2015, Biowatch was founded by Matthias Vanoni and Joe Rice. The company is developing a biometric watch system that will identify vein patterns and keep track of body temperature to ensure maximum security. The system intends to serve as a badge and identification tool that replaces conventional methods and adding increased layers of security. In addition to the biometric watch system the company has developed a so called "companion app” that makes it possible to pair the biowatch module with multiple services. The app then lets the user access paired services, replacing cards, keys, PIN codes, passwords and fingerprints. There are currently fifteen people working for the organisation within a very horizontal structure where noone is managed by someone with a C-level title. Vanoni, the CEO, acts more as an exemplary leadership figure than a conventional leader with managerial control.

Catchbox

Catchbox offers a revolutionary throwable microphone solution targeted at conferences, meetings and even lectures. The microphone is impact resistant and can be thrown across a room without any concerns for health or technical failure. The company was founded by three students from Helsinki. The co-founders had different study backgrounds and complemented each other in the conception of the product. The initial idea for the product came at a conference that used conventional microphones that had
to be passed around and those three students believed that there should be a simpler approach to this. Catchbox distributes its product globally and currently has clients in 35 countries.

**ioLight**

Andrew Monk and his partner Richard Williams started working on the conception of a portable microscope in 2013. ioLight was conceived in February of 2014 when the two founders patented the concept of their small portable microscope as well as incorporating the organisation. As of this month, ioLight has sold 100 units and is starting to scale up production while making considerable efforts to develop the business. The product in a sense has therefore completed the initial disruptive innovation phase and now the company is scaling up operations so that the product can be brought to market in sizeable quantities.

**Vigilitech**

Marc Zünd, the CEO of Vigilitech, describes his organization as a typical medtech company that solves problems which have risen in recent medical research. The company was founded in November of 2016 and has been in the prototyping phase of the first product which is a non-invasive monitoring device that keeps track of vital signs such as temperature and heartbeat of mice. Vigilitech could be seen as a more conventional start-up that developed out of an idea conceived by a student and then developed over time into a complete operation.

**Happy Patients**

As this company wishes to remain anonymous, Happy Patients will not be described any further.

**4.2 Shared Leadership**

**Disruptive Technologies**

Philipps mentions very early in the interview that the company does not have an organizational chart because the entire company is still structured as a project team. The key activity until recently was to develop a product. For this process alone 33 of the total 42 employees are part of the engineering team, the rest are part of operations, administration and sales. For Disruptive Technologies it now becomes important to transform the project into an organization with structures, where there are clear collaboration- and decision lines that ensure the project becomes operational and so that the production can be ramped up to an industrial scale. In essence, there are now efforts to turn the company more into a line organization. However, Philipps states that the team is still considering how to structure the innovation team. As the product is still under development, the entire company is focused around that aspect right now. It will now become a challenge how to structure this part outside the operational aspect of the company where it can still generate product development and disruptive innovation effectively, while being able to manufacture, distribute and provide customer support to
the developed product. Overall, it was mostly engineers that the company started with, and now it is taking shape in engineering, operations, sales and administration.

The engineering team is the research and development (R&D) team and has very clearly defined roles as all members inside the team are specialists that come from big companies, e.g. Google. They count to the best in their respective field such as hardware, radiofrequencies, software, and cloud databases. As the complete solution is very complex, there is a big R&D team because every distinct aspect needs a specialist. Because of these specializations every individual in the team holds a high competence and responsibility in the respective field of proficiency. The innovation process, however, is very rigid. So there is a mix in the disruptive innovation between high empowerment of the individual and a strict process.

The company is fully virtual and as such there is a high degree of documentation that is made available to everyone in the company to make well informed decisions. This, argues Philipps, is one of the strength of having a shared leadership approach. In contrast, now that the company is scaling up and teams are reaching a sense of critical mass, it is not possible to include everyone in the decision-making process anymore.

The structure developed organically because of the complexity of the product and the necessity for people to a high degree of decision power. To accommodate for the change in size, Philipps mentions that the company already has a Chief Product Officer (CPO) and a Chief Technology Officer (CTO) and now focuses how to split the responsibilities between these two critical functions going forward and how to allocate resources to these separate groups.

**Biowatch**

Because of a background in the military, Vanoni has experienced one of the most vertical institutions. In contrast, he was for a horizontal organisational structure inside Biowatch, with competencies and responsibilities spread out among the staff. Vanoni argues for the different strengths and characters of individuals and how these complement each other to bring a better solution and product. As CEO he still has the strategic last word. Nonetheless the problem-solving and decision-making process inside the company is spread out as far as possible to empower the employees. The start-up also employs a chief financial officer (CFO) as well as a CTO, which are responsible for key areas in highly specialized fields. The company holds a daily all-hands meeting at 11am, where everyone informs the rest of the team what they are working on and explaining upcoming challenges and missions so that everyone knows what is happening inside the organisation. The idea is, that if the company was like a full functioning body, the right hand always knows what the left foot is doing and so on.

The reason for the choice of this leadership approach was a very pragmatic one. Vanoni says, that there is simply too much work to do. One person is in charge of a lot of things and to ease the load, a new position is created to take some of the responsibilities off that person’s back so that they have more time to focus on specific key tasks. These
people are given autonomy over the way they work and are granted full empowerment to lead their specialization.

Vanoni thinks that it is important to hold regular meetings to make sure that people do not deviate too far from the strategic direction of the company, and sees this as one of the downside of the shared leadership approach. However, if this is managed correctly and done consequently, this approach serves the company better than having a high degree of vertical structures. Biowatch took a slight turn in the leadership aspect in 2017 when Vanoni started to reduce his working schedule. An increase in development- and delivery delays was observed by the lead investor and so action was taken. Vanoni held a team meeting to create a sense of urgency and established himself as an exemplary leader which the team could rally behind and pick up the pace to point where the two last months felt like six months in terms of team output. "If the leader sits, the soldiers lay down” Vanoni says. And with this saying he argues that exemplarity is the key and that the issue is not about verticality or horizontality. Vanoni does not wish to sit on the shoulders of his employees and micromanage them but rather wants to set an example.

**Catchbox**

In the organizational chart of Catchbox there are separate teams with different responsibilities that are set up horizontally with an administrative- and support bubble which overarch these teams. The administrative team holds the hierarchical structures inside the company, e.g. the CEO, CFO. While other teams such as R&D and production, marketing, and sales are organized very horizontally below. While these key positions hold traditional titles, their position is not as strongly regulated as in hierarchical organizations.

When looking at the R&D and production team, where innovation happens, there is a responsible person that is representing the team with high degrees of autonomy inside the team. The low input barriers inside the teams and across the entire company make it possible for anyone in the company to contribute to a new product development. For example the sewers are more concerned with producing the catchbox mantle even though they can also bring their input into the product development so that key flaws or opportunities these employees notice in their key task influence the decision making.

For Catchbox the shared leadership approach came as a natural choice. As the co-founders were friends with complementary knowledge regarding a complex task, they had never thought about setting up strictly hierarchical leadership structures. Dalmane believes that the shared leadership aspect adds a positive influence on the innovation process when a product development is going on for a long time. It brings in a fresh pair of eyes that views a problem from a different standpoint. However, a downside is the snowball-effect that may come with asking a specific question. This can continue on unmonitored, creating big paper trails that can get out of hand. This is even more substantial when it concerns a very simple question that should be solved easily. Sometimes a smaller group of decision makers or higher degree of competence with
individual in the R&D and production team might solve the issue more easily and rapidly.

**ioLight**

The official organizational chart consists of the two co-founders. As such, ioLight could not be more horizontal than that. The two have deliberately avoided to regulate how they work together. Monk argues that both have to do everything inside the company. He describes himself and his partner as being very similar in character and world view, which he believes to be a good thing in order to not waste time by disagreeing with each other. The idea that each partner should do every task works well for them as they have known each other for over 15 years. Monk sums up, "we don’t ask permission, we ask for forgiveness". This allows the two co-founders to react to immediate threats independantly and along the perceived strategic line they both want to operate on together.

The positive aspect of this shared leadership structure is the fast response time on any issue. The disadvantage is that both can make mistakes that a more diversified team would not make. As people become well informed through their peers, they can avoid pitfalls that present themselves to an uninformed specialists that is focused only on his own field of expertise. In a wider sense, Monk argues that the company employs 13 people in total, but due to legal issues with how these workers are only related to the company and not directly employed under United Kindom laws. Therefore, these employees are under indirect employment as Monk calls it.

**Vigilitech**

The structure inside the company is very flat. The five people that work for Vigilitech are also friends in their private life. Responsibilities and competences have been shared out among the group according to the individual specializations. Zünd emphasizes, that even though he holds the title and position of CEO, he is not the figure on top that is managing people and tells them what they have to do. It is consciously designed as a team effort where every single person contributes. Any design or product decision is made inside this innovation team and is not just left up to Zünd as the initial person behind the idea.

According to Zünd, the size of the group matters when deciding how to structure an organization. He argues, that with a size of five people, it is easy to distribute critical information among colleagues. The aspect of friendship also plays an important part in how information is distributed equally in the group. As the five friends are very similar in character it sometimes becomes hard for them to discuss issues and reach a conclusion. However, taking the necessary time to reach a conclusion minimizes the risk for errors. As the five people have very different backgrounds, different knowledge is combined in the development team which creates a more diversified product and results in decision making that is covered by a multidisciplinary approach. In this team, people with different backgrounds such as programming, computer sciences, electric technician, as well as Zünd himself from a straight science background combine into the
development team of the product. For business related questions such as writing a business plans, the team utilizes outside coaches.

**Happy Patients**
As a start-up the company also organizes itself in very flat structures. Norman says that everyone performs pretty much any task imaginable. The person goes on to argue that the empowerment of the individual is very important. As a result everybody inside the company has certain tasks to fulfill while retaining substantial freedom in the approach of these tasks. All efforts are coordinated in a weekly meeting where difficulties and possibilities to reach the current project goal are being discussed.

According to Norman the empowerment of the individual gives high responsibility, which has a very motivating effect on the workforce. The company organises itself in task forces that are responsible for specific aspects of the final product. In these groups they have a leader under equals, ”primus inter pares”, which are the only hierarchy positions inside the company besides the CFO or CEO.

A positive effect of this empowerment lies in the increase in intrinsic motivation throughout the task forces. The employees take ownership of the product and make it part of their own success story because they are the one’s who have to make decisions which requires courage for situations where the outcomes are uncertain. A negative effect is that more mistakes are made in a flat organization.

**4.3 Innovation**

**Disruptive Technologies**
The founder and CEO argues that being able to create disruptive innovation requires a very disciplined approach to push yourself. Start with the direction where you want to go and then define the way there. It is not about improving what is already there but rather about something that has not been there before. Philipps argues that the innovation is not necessarily a creative process but rather a disciplined process.

Philipps goes on to say that the engineering team is usually very focused on technical issues while the sales forces receive more input from customers. The common meetings have the goal to bring everybody in the organization up to speed on the status of product development, operations, and customer/sales. The culture of ”anyone can contribute and ask questions” feeds the innovation. However, these touch points need to be structured clearly to have serious effects (Lodico et al., 2006). Empowering people and give them a sense of responsibility and ownership towards the product is what increases disruptive innovation for Philipps. However, an issue with including everyone is the amount of noise that all the inputs and paper documents create and this can be quite the cognitive load to process. Overall, the implemented shared leadership has a positive influence on disruptive innovation if the negative aspects are managed correctly.
**Biowatch**

The concept by Joe Rice from 1985 was not detailed at all and merely introduced the idea of a communicating watch working on radio frequency and with some kind of encryption. In a joint effort that lasted over two years, the two co-founders came up with a 2mm thin product that could make high quality images of the vein pattern and an algorithm that could run the electronics. The innovation really took off in 2016, when the Swiss Center for Electronics and Microtechnology partnered up with the co-founders, and when Biowatch received a government grant of 800'000 Swiss Francs (CHF).

The two teams were working with some degree of independancy, but the co-founders were informed about every single step that was taken in the external research team. All directions of research were discussed and validated by the owners. But as long as the strategic direction was consistent the research group was free to develop in whatever form they chose. Vanoni sees innovation as a short moment which then turns over into an execution process. According to him, innovation is mainly concerned with the idea and two to three years of development which are seen as execution. Experiences with external PhD students showed the company that a weekly report schedule left too much ambiguity and dislocation between key partners in the development process, which was not beneficial.

**Catchbox**

In the innovation process, Catchbox relies on its company culture of approachability of people and the 360 degree feedback, where it not only comes from inside the company but also the outside in the form of client input. Weekly all hands meetings ensure a well informed work force and allow the development team to make well informed decisions when it comes to the product. Therefore these meetings are clear drivers for disruptive innovation inside the company. However, this crowd-sourcing of innovation needs is only recognized if a significant amount of customers and internal employees have the same experience with a specific issue or idea.

One of the beneficial aspects of the shared leadership approach comes from the empowerment of the workforce. By having a company culture that encourages individuals to try out new ideas and not punish failure but rather focusing on learning from the made mistakes Catchbox creates an environment where employees do not only feel like they have to work but rather act as intrapreneurs for the company that are part of the success story behind the start-up.

**ioLight**

When it comes to the disruptive innovation, Monk counts the unconventional characteristics of him and his co-founder as key assets for the innovation. Monk is not a typical physicist and Williams is not a typical engineer. They both have a sincere interest in fields such as finance and commercial application, which makes them capable of seeing the product from different angles without having to rely on large teams which can eat up a lot of time.
The initial idea came to them in a pub where they sat down and talked about what they could do with their future careers as they were discontent with their current positions. They discovered that there was no serious portable microscope available on the market and the invention of smartphones and increased sophistication in screens enabled them to develop a disruptive product. The pair smartly hedged their lack of knowledge in fields such as industrial design by getting in contact with teams that could complement their knowledge and gave them the needed independance to solve their issue. After this step, the pair split up to the point where Williams stuck with the design team and Monk focused more on the potential customers and their specific design.

**Vigilitech**

As a PhD student, Zünd worked with a lot of mice. Surgery of these animals requires monitoring but there is no device on the market that supports researchers in keeping these animals alive. Zünd argues, that researchers need to be able to ensure that the mice do not die just like regular doctors need to make sure their patients are still alive. This was the initial moment that sparked the idea and started the project.

In one of the lectures at university Zünd’s idea of the mouse monitor was selected for further development through a group work. With this group work in hand, Zünd approached the four other team members and together they started the development process for the product. The course only focused on business development. The innovation thereafter was a combined effort of the newly formed team. Critical decisions regarding the product or the company are made inside the entire group. One key driver for the innovation of the company is the principle of always striving for something simple and safe.

For Zünd there is a clear connection between the flat structure of the team and the innovation that took place inside the company. By combining the multidisciplined knowledge and integrating it into the final product, all people took part in the innovation process. As the company is stuck in prototyping for now, efforts in disruptive innovation of new application methods for the product have slowed down.

**Happy Patients**

The founder of the company has a personal story that gave him the push to develop the product. As the methods used in the situation were very archaic, he believed that there is a better solution out there. Research in the field of the product had been conducted for over 40 years already. Specific technical issues prevented any success in creating a final product until Happy Patients commenced with the innovation process.

Happy Patients does not employ any specific innovation team, and Norman does not believe in such teams because he thinks that any person who understands the problem can innovate things in an infinite number of ways. The empowerment of the individual enables alot of creative freedom and through this increases innovation. The consequences for failing with an idea have been taken away so that the people do not have to fear any consequences.
To steer the innovation in the right direction a weekly meeting is held at which target goals are established that the team wants to fulfill. At these meetings anyone is able to introduce a certain solution for a goal or problem that has been mentioned before. This will then be discussed and reviewed inside the group. This company culture of trial and error and the acceptance for making mistakes are the drivers for innovation according to Norman.

4.4 International New Ventures

Disruptive Technologies
The international target market was never questioned. The company was always conceived as an international new venture and the available technology has made this possible. Overcoming regulatory pitfalls are some of the more significant challenges that an international new venture in a very technological area faces. Lawmakers as well as lawyers do not understand most technological issues and so it is hard to create global standards and legislation which can be universally applicable. Another challenge that Philipps identifies is becoming operational in a short time span. Clients expect operations to be established immediately which is not always possible depending on certain barriers such as local certifications, tax, import and customs restrictions and physical distribution that a product has to overcome.

Biowatch
The company is now in the phase of industrializing the product. The firm is making a design for manufacturing and should have a first prototype of the final product by September 2018 and the first batch of production by the end of 2018. Even though the company uses an incremental approach to internationalize, there is a clear desire to make this product available on a global scale later on. "Everyone has a wrist and everyone can use it" says Vanoni, arguing that the way the product was conceived was very international. He does not perceive any current needs to adapt the product or the company to adhere to an international market.

Catchbox
From day one it was obvious for Catchbox that a domestic market would simply not be rational. Already in the funding processes the company went international by starting a successful Kickstarter campaign. As soon as the product was in mass production, international shipping was available on the company website.

However, with the international aspect came also some barriers that needed to be overcome. Certification was one of the major parts that needed to be secured so that the product could launch in certain markets. In addition, the cultural aspect of how meetings or conferences are being held in specific markets made the product not capable of being sold completely globally. Countries like Japan and Saudi Arabia have a different culture than most European countries and this is what keeps Catchbox from entering these markets.
Another challenge for the shared leadership aspect in the company is that employees work in different timezones. There is sales staff that works from the United States of America while others are spread over Europe. Therefore specific employees have earlier working hours while others come to the office later in the day. To organize and be able to coordinate with everyone, the company structures the employee presence in such a way that during a five hour window, every single person inside the organization is working. So a high degree of human resource coordination and planning is necessary.

ioLight
Monk argues that if you are dealing with hardware and products these days, you have to go international with them. Overhead costs put a heavy pressure on the profit margin and as a result of that, making 100 or 10'000 units does not make a huge difference in terms of these fixed costs. This of course depends on the degree of automation in the production line. Therefore, ioLight followed the logic that the quicker the target market can be expanded, the better it is for the profit margin.

In terms of the innovation, there are no real barriers for the product as scientist around the world use the same measuring units. However, from a legal standpoint, ioLight chose not to file patent claims in China and Japan as they do not speak the respective language. As lawyers would not understand the intricacies of the developed product this might result in inaccurate patent claims which would then be voided later on.

Vigilitech
As the scientific community is very international the company intended the product as an international from the beginning. As most scientific research is based on the same principles such as empirism, Vigilitech is able to provide a standardized solution around the globe. International sales were therefore a natural choice.

To stay on top of the international environment, the company focuses on jumping onto the trains of standardization. This also ensures that regulatory claims and issues are avoided as much as possible, as these methods are already clearly regulated. By patenting their sensor worldwide the team ensured that there are no copies of the technology in the near future.

Happy Patients
The product is created like a platform and as such things can be added or taken away. The product was perceived to have an international market from the beginning of it’s conception. In an international context in the medtech industry there are different medical techniques, and operational procedures that need to be followed. This creates a challenge for the development team to come up with a product that will be able to adapt to any situation possible. The company argues that as the field of business and the disruptiveness of the product is so significant, this company alone is not able to effectuate the entire change of the industry. As a result the company is always making efforts to create collaborations with the global community.
Norman mentioned in a final and personal comment a different approach on how to organise the innovation inside the company if there would be a scaling up. Instead of creating global innovation teams, Norman would establish teams in specific geographical regions but these teams overlap each other and have a certain degree of redundancy to them. By empowering separate regions which then try to adapt to local needs, completely new products might get developed that could then be taken on in other regions as well. When asked where the redundancy between separate development units should stop Norman mentioned the geographic distance as a measuring unit.
5 Analysis

5.1 Shared Leadership

As the practical implementation of a model defined by Pearce & Conger (2003) is viewed critically, Locke (2003), Cox et al. (2003) and Mayo et al. (2003) propose a combination of hierarchical leadership with shared leadership. This recommendation is confirmed by the empirical results of this thesis. Disruptive Technologies, Biowatch, Catchbox, Vigilitech and Happy Patients have both vertical and horizontal leadership in their organisational structure. The case of ioLight is an exception. In this start-up, the two co-founders share the leadership and both have a high degree of independence in their decisions. An important factor here is the size, since there are only two persons in the company and both have the same areas of responsibility. Moreover, the same philosophies and similar opinions have made constructive and efficient cooperation possible. In summary, it can therefore be said that based on our empirical data an significant majority has an integrated model according to Locke (2003).

In the model of Cox et al. (2003), the authors refer to the implementation of shared leadership in an existing organization. This is not consistent with the empirical results. All examined companies have operated in the corresponding organisational form since their foundation. This circumstance can be justified by the fact that all companies are start-ups and the firm have been active on the market for a maximum of five years or are just reaching market maturity. For Disruptive Technologies, Biowatch and Happy Patients, the choice of leadership approach was a pragmatic decision. Be it through too much work, which limits the capacity to lead employees hierarchically, or money, which the companies prefer to invest in product development rather than in additional personnel. For the other three companies ioLight, Catchbox and Vigilitech, the choice the leadership approach was an organic process and was not necessarily based on operational or economic reasons. The common denominator between the founding members of these companies is friendship. While Catchbox and Vigilitech were founded by students pursuing a university career, the long friendship of Andrew Monk and Richard Williams was at the beginning of ioLight’s existence. As a result, the question of the form of leadership never arose, because it was clear that the company would be organised horizontally. Consequently, it can be stated that there are different reasons for using shared leadership and the implementation was never a question due to the fact that all companies are start-ups.

A factor that argues against a clear hierarchical form is the complexity of the tasks in the area of disruptive innovation. Cox et al. (2003) expect a particularly large impact of shared leadership in an environment where new products are developed, because the tasks are complex and the workers need to have a high level of skills. As all of the examined companys confirmed, they need specialists with in-dept knowledge in various areas. Consequently, it would not be possible to have an overview of all processes as a CEO of a small team. Hence, the distribution of the leadership was an evident solution
in all of the cases. The six companies are at different stages of the innovation process as described by Urabe (1988). This has an impact on the organizational structure and the leadership approach. Happy Patients, Vigilitech and Biowatch are in the prototyping phase. The focus of these start-ups is therefore on the further development of the product and the elimination of teething troubles. Due to the relatively small size, team meetings are held at regular interval, on which all employees are involved and interact. As can be seen from the empirical findings, all participants benefit, since problems are viewed and discussed from different perspectives. In addition, every person is informed about the current processes and is up to date. As a result, efficiency is increased. This effect is confirmed by the theory of Dawson (1992) and Sims (2002).

Catchbox and ioLight are start-ups that already have a product on the market. It can be said that they have finalized the disruptive innovation process. Due to the market entry of the companies and the high degree of dependence of the tasks, Kraut & Streeter (1994) assume that more structure is necessary to coordinate the tasks. In fact, the organizational structures of both companies were expanded with a view to market entry. Although ioLight officially consists of only two people, there is a team in the background, which counts 13 staff member. These cover the areas of design, legal, accounting and sales and are employed by ioLight on a contract basis. With this team size, the current workload can be mastered. However, as the company grows and will be producing thousands of microscopes - which is also the demand of the shareholders - the requirements for the organisational structure must be rethought and the leadership form will be adapted eventually. One step further ahead in the innovation process is Catchbox. Due to the high demand and the worldwide shipping, the company relies on a broad-based organization consisting of the R&D team, the production team, the marketing team and the sales team. The founders were able to successfully transform a small start-up into an expanded organisation with more structures but without having to forego the horizontal leadership style. Both companies were or are faced with the question of how much additional structure is necessary to allow the organization to grow to a meaningful extent, but at the same time not to reduce the ability to be innovative through too many hierarchical restrictions.

Disruptive Technologies is currently in this transformation phase - the start-up has been structured like a project since its inception and is now being transformed into a structural organization with the launch of the product on the market. Production and sales are standardized to achieve optimal use of resources, while in R&D the shared leadership approach is maintained to promote innovation capability. In summary, all of the investigated start-ups are trying to keep more creative and complex areas in rather flat structures, while the aim is to streamline simpler and less demanding areas. These empirical findings are consistent with the studies (e.g. Mei & Wang, 2013; Hoch, 2012) that have examined innovation in the context of shared leadership.

As expected by Pearce & Conger (2003), the positive effects of shared leadership dominate in all examined companies. Happy Patients primarily noticed an increase in intrinsic motivation among employees, because they are involved in the innovation
process and can take responsibility. An identification with the product takes place, which has a positive effect on the company. Vigilitech, Disruptive Technologies, Biowatch and Catchbox stress that they benefit from the crowdsourcing effect. By providing all the data and all the figures as practiced, for example Disruptive Technologies, companies can benefit from the wisdom of the crowd. According to Happy Patients, errors can be prevented by the availability of all information within the company, because another person may already have dealt with a certain problem. In general, empirical data show that companies maintain a positive error culture. This means that the start-ups accept possible mistakes and see this as a learning process. Monk of ioLight emphasizes that "you better make mistakes but make them quickly".

The downside of too much information or if too many people are involved is the confusion situation. Dalmane of Catchbox speaks of a snowball effect that starts to roll when, for example, details are decided and every employee is allowed to contribute his or her personal opinion. The challenge is therefore to filter out the relevant things from the vast amount of information. This problem can arise particularly from a certain size of the team, as Disruptive Technologies emphasizes. This statement can be linked again to the theory of Dawson (1992) and Pearce & Sims (2002), who see an increasing number within the team as detrimental to effectiveness.

5.2 Disruptive innovation

Urabe (1988) argues that no matter how ingenious an invention or improvement might be, it does not characterize as an innovation if there is no added value or profit for the company. This was also directly mentioned by Monk, the co-founder of ioLight, which mentioned that innovation is nice and well but that the ultimate goal of most businesses is to make money. With the companies that were chosen for the sample this criterion must be considered in two parts. Firstly, only ioLight, Catchbox and Disruptive Technologies have a product on the market and are selling while Biowatch, Happy Patients and Vigilitech are still in the development or prototyping stage. Secondly, as this thesis is dealing with a disruptive product in all six cases of our study, the added value is part of the identity of a disruptive product.

When innovation and disruptive innovation in particular are being discussed, Urabe (1988) suggests that it should be seen as a long and cumulative process of several influencing factors and decision-making processes that range from the conception of a new idea to the implementation and not as a single instance in time. Controversially, Vanoni argues that inside Biowatch, the disruptive innovation is only seen as the-heureka moment where the initial concept of the idea is conceived. Dalmane, who works at Catchbox, hinted in the same direction, while only speaking about the further development of the product, and the initial innovation took place between the three founders. Philipps from Disruptive Technologies says, that the engineering team also dislikes to talk about the term innovation and use development instead, as this hints a continuous process unlike the way in which innovation is perceived as a one time event. To make an analogy, some of the people working in business would therefore see
innovation as single picture, while researchers argue that innovation is a process that resembles a video instead.

This discrepancy between some fundamental assumptions of innovation made by researchers on the one hand, and the perception of innovation as made in the field of business, is mentioned by Hopp et al. (2018) and Christensen et al. (2015). The key arguments put forth by the theory are extensively misinterpreted and are misused frequently. Hopp et al. (2018) argue that the term disruptive innovation specifically has been used to describe any case where an industry is shaken up by a new invention and in this lies a problem. The authors of this thesis see a reluctance from other companies when talking about innovation. Disruptive Technologies’s engineering team even goes as far as openly admitting that they do not want to categorize their work as innovation. This shows a distrust that might stem from the overuse of the terminology. Innovation as a term has developed into a buzzword that is used anywhere and through that lost credibility.

As discussed by Philipps there are certain outcomes of shared leadership that may be detrimental to disruptive innovation inside Disruptive Technologies. Being specific, the company has grown to a size where receiving input from the entire staff becomes inefficient. The engineering team that is responsible for the innovation has to filter much more information that will then be transformed and used. This brings the danger of a crowding out effect of viable information. In addition, as mentioned by Ensley et al. (2006), shared leadership has negative influences on a company like Disruptive Technologies that is undergoing major structural changes. Biowatch underlines this from another angle, by saying that mismanagement of shared leadership may even hinder innovation. In this case, the company had a shared leadership approach but noticed that the company was starting to miss deadlines. Vanoni, CEO of Biowatch, had to set an example to his staff so that the team would pick up the pace again. The authors of this thesis see a clear connection between the mismanagement of shared leadership and negative effects on disruptive innovation as several interviewees have mentioned the importance of controlled information exchange inside their organizations.

Disruptive Technologies has tackled this issue with weekly all hands meetings and giving clear urgency to problems that show up repeatedly. The interval for these meetings varies from company to company but can be found in various degrees in the sample. Some firms do daily meetings where they set goals for the day and discuss struggles they are dealing with while others prefer the weekly interval. Vanoni of Biowatch is very opposed to only meeting weekly with people that are not located in the same offices. He sees it as an issue for communicating progress and direction of the innovation inside the off site staff and therefore prefers the daily meetings with all employees working in the same location. In contrast, Philipps mentioned that the company works completely online and has not mentioned any issues with innovation in teams that are operating in a decentralized structure. An extreme form of the meetings can be seen between Monk and Williams of ioLight, the two friends communicate after an issue has been solved by one of the two in the company in order to streamline the
decision-making process. Giving the two of them the capability to decide on their own paired with their separated focus on either the design team or the client side of the product delivers the perfect tools to create the needed innovation. All these forms of communicating coincide with Cox et al.’s (2003) aspect of the maintenance of shared leadership as a responsibility of successful leaders. According to the authors shared leadership inside an organization needs to be clearly defined and understood by all members.

Norman, working for Happy Patients, talked about the future of innovation inside a company that makes a successful transformation in a way to becoming operational and bringing the product to market. In a scaled up company, Norman does not believe in a centralized innovation team that guides the strategic path of the technology in use. Much rather, he would like to see decentralized development units that are responsible for generating new technology. These units would be spread around globe and through local influence bring different viewpoints and needs into the development generating the disruptive innovation. This approach symbolizes the shared leadership aspect in a global organizations and the development teams inside this institutions. Norman compared this to prior work experience where centralized units were responsible for the innovation process. Disruptive Technologies closely relates to Norman’s idea as the engineering team has the capability to work decentralized as well. As such, the authors of this thesis see this as a clear argument against centralized innovation teams in large enterprises that operate in an international context. Cox et al. (2003) speak about diversity as a factor that may influence shared leadership. Norman clearly follows this idea of diversity for his potential innovation teams as he would spread them across the globe to leverage culture or region specific insights.

Schumpeter’s (1942) idea of creative destruction sees the entrepreneur as the incubator of innovation. However, his form of innovation is radical in character and creates a new technology or product in a new market that threatens businesses as they exist before that innovation. The same idea can be made about disruptive innovation and entrepreneurs. Disruptive innovation while not as drastic as radical innovation still presents a market with a new technology that may influence existing marketeers. This is in alignment with the sample. The authors of this study chose to focus on start-ups which are created by entrepreneurs and observe their role and influence on innovation. An excellent example of such an entrepreneur would be Monk and his partner Williams which saw an opportunity in the changing quality of smartphone screens and created a new product out of this emerging opportunity. The founder of Happy Patients also reacted on a presented issue where the used methods were not well refined and current capabilities in technology allowed for a innovation to take place. Zünd of Vigilitech acted in a entrepreneurial spirit as he discovered that there were no products that could cover his needs in medical research and then set out to solve this issue by himself.

All these disruptive product innovations share a common factor: They were brought forth by an opportunity. The product created by Happy Patients can be seen as a solution that would make the prior technology completely obsolete and inferior.
However, if the product, developed by Happy Patients, was not brought to market, there would still be a valid pre-existing solution for this specific task. Another such innovation is the small sized microscope developed by ioLight. It simply offers the product in a smaller, portable size that makes it capable of performing field research, taking the laboratory out of a building and putting it right where it is needed, in the field. Vigilitech’s non invasive monitoring technology is an example of an opportunity where there was no other non-invasive monitoring product available to oversee laboratory mice while performing research on them and so Zünd came up with the idea to create such a product by himself.

Opportunity research concerns itself with the initial stage of an innovation process. As a result, the findings among the samples lead back into the theory of innovation and some of the researchers but not in the same context.

5.1 International New Ventures

Oviatt & McDougall (1994) argue that international new ventures (INV), in contrast to organizations that develop through incremental steps into a multinational enterprises (MNE), start with an international strategy from their conception. Comparing all six cases of this study the authors see that this holds true with all the cases that were observed. Biowatch, by choosing to only deliver domestically and in France in the beginning, is the only outlier that has limited the international target market in an initial stage of the project as they want to grow at a sustainable rate and want to understand their target markets before they enter them blindly.

Ganitsky (1989), Jolly et al. (1992) and McDougall et al. (1994) all pointed out to various degrees that the success of an INV might depend on wanting to become international from the conception as well as an innovative product or service that fosters international sales growth. This is consistent with the answers given during the interviews. The common consensus among the interviewed companies was, that if a company produces a product and not a service, in most cases this product needs to adhere to an international market. Monk of ioLight says, that the overhead costs are too high and the procurement of specific parts for a complex product in a domestic market are too difficult to justify staying domestic if the product can be scaled up.

Catchbox in relation to an INV was facing different challenges, as some of the workforce is working overseas. The all hands meeting and certain teams need to be organized differently to create an overlap of working hours inside the company so that everyone is reachable during a fixed period.

Over all the observed start-ups, there is a noticeable trend in terms of the international aspect. Being an INV is a necessity for most of them. Trying to avoid having an international client base and value chain is a luxury and foolishness that no one who wants to scale up can really afford.
6 Conclusion

6.1 Findings
As international new ventures have emerged over the past twenty years, they brought with them a more dynamic form of leadership. Shared leadership models have dominated organizational structures of these INVs due to resource constraints and high degrees of specialization. However, unlike Pearce & Conger (2003) suggest, these companies have not adopted the ultimate horizontal structure to fit their needs. For these companies, it is impossible to operate without some form of hierarchical structure, responsible for strategic decision-making, that complements the shared responsibilities and flat structures. In this complex environment that these companies are operating in, even a CEO of a small start-up may not be capable of understanding the entire technological aspect of a specific product. Specialists are needed that possess the necessary competences to make key innovation decisions. As such, an integrated model of shared leadership emerged, which tries to combine the best aspects of two approaches. In this new model chief positions decide on a strategic path that the company takes while the specialists try to develop a product along the lines of this strategic path. Although, there are many benefits to such a model, there are certain key challenges that these INVs should be aware of and should try to overcome when implementing shared leadership.

Focusing on the benefits, it becomes evident that shared leadership offers many positive influences on the innovation process of INVs. By flattening the hierarchy structures the entire company becomes part of the innovation process in different ways. While there are still clear developers for the product itself, other members of the company are able to influence the decision-making with crowd-sourced information that enables a 360 degree view of a given problem and includes all the stakeholders. Through the gathering of this cross-field knowledge a more wholistic product is created that usually leverages the most optimal solution as a result of the collected information.

As these innovators possess the competence and responsibility of making key decisions in the product, efficiency inside the company increases and, more well-informed decisions are made faster in the innovation process. This empowerment of the individual inside the company leads to an increased intrinsic motivation. Through this increased motivation people became more invested in the project and started to see themselves as integral parts of the business success. Andrew Monk of ioLight described himself as the typical entrepreneur that has a very shallow but broad knowledge. Generally, disruptive innovation processes are complex and specialists are needed, these INVs maximize individual competencies and enable the exchange between these specialists in the form of cross-field knowledge. The intrinsic motivation in turn encourages employees to develop an entrepreneurial mindset with which they can positively influence the innovation process. This entrepreneurial mindset instilled a sense of ownership and togetherness. Although, trends were certainly visible, trust and group cohesion were never mentioned as clear benefits of the implemented shared
leadership and there was no clear linkage visible between these two factors and disruptive innovation inside international new ventures.

While a flat hierarchy structure works well for creative teams that are trying to innovate and develop a product further, operational parts of a company do not benefit from these structures in the same way. When a product has been developed to the point where it can be sold in a market, more standardized procedure is needed to manage the operations. As a product matures the focus switches from the development of key features and benefits, to a cost-optimization which is easier to measure in a standardized environment. Shared leadership is no such standardized environment.

When looking at innovation and disruptive innovation specifically it became clear that there exists no mutual understanding between academic research and practitioners. This lack of understanding is so severe, that certain INVs already shy away from using innovation as a term altogether. This is concerning as it creates a dislocation between researchers and the private sector, where researchers are not able to conceptualize and study innovation easily and companies are not able to benefit from the academic research. These companies are suddenly unable to distinguish what research may be applicable for them.

What clearly stands out is the entrepreneurial thinking and its influence on disruptive innovation. As INVs were studied the entrepreneur builds an integral part of the influence on disruptive innovation. Not only should entrepreneurs be seen as the positive influence but also their subordinates. Employees that behave like an entrepreneur for a company are frequently called intrapreneurs and it could be favourable to study the relation between these intrapreneurs and the disruptive innovation inside these INVs as well.

INVs need to be careful when implementing shared leadership in their innovation process. With increased team size in innovation processes the crowding out effect of crucial information increases. This endangers individuals with competencies to make false decisions based on misinformation. Therefore these organisations need to clearly organize the flat hierarchy structure in a way where discipline can be enacted and a clear information guideline is put in place.

The way in which Christensen et al. (2015) see disruptive innovation does not align with the view of many other researchers and this is a reason why this topic has produced so many interdisciplinary papers (Hopp et al., 2018). Even though the outlines of the field of disruptive innovation research is blurred, this thesis is in dire need of a distinctive definition of the term and will therefore produces an own definition for the sake of clear limitation. Christensen et al.’s (2015) view of the term would disregard companies and products that are seen as disruptive by a majority. This thesis therefore suggests disruptive innovation along the lines of Schumpeter (1942). However, there needs to be clear distinction as Schumpeter’s definition of innovation is more radical in
character which does not fit the topic of this thesis. The definition that is suggested to be used goes as follows:

*A new product or service, technology, new source of supply, a new type of organization which creates a decisive cost or quality advantage and which threatens the existence of prior products in the same market of existing firms.*

### 6.1.1 Adaptation of Conceptual Framework

As part of this research the authors of this study started to see that the conceptual framework did not fully depict the findings. While it was relatively simple to prove that creativity and efficiency as outcomes of shared leadership, other findings did not relate to disruptive innovation that easily.

Group cohesion was not a criteria that was mentioned by any international new venture. Instead what these start-ups were focused on was their business culture and overall environment inside the company. Working together and achieving goals as part of a group with individual competencies increased the intrinsic motivation of the individual instead. As this intrinsic motivation increases the entrepreneurial thinking of the individual in the organisation, disruptive innovation surges as well.

Another outcome that increases with shared leadership does not have any direct influence on disruptive innovation either. Across INVs there was no observable raise in trust through the implementation of shared leadership which could have had a positive influence on disruptive innovation. In contrast, the cross-field knowledge inside companies increased as individual specialists received more competencies. These specialists then gain insights from each other and make choices that are based on wider information.

As a result of these findings the authors of this thesis adapted the conceptual framework as seen in Figure 5.
6.2 Limitations

During the writing process of this thesis, certain limitations were identified which restrict the quality and scope of the empirical findings. Due to the three variables "shared leadership", "disruptive innovation" and "international new venture" the number of potential companies for interviews was massively reduced. Although a wide-ranging search was started and numerous companies were requested, an industry-specific study could not be carried out due to the small number of willing interview partners. Despite the international character of this bachelor thesis, the empirical results cannot be applied worldwide due to the nature of shared leadership and cultural differences. According to Hofstede (2011), employees in cultures where power is distributed autocratically and paternalistically are more satisfied with hierarchical forms of leadership, while employees living in cultures with more democracy and co-determination tend to prefer the participatory leadership style. It is therefore possible that shared leadership may not occur in companies located outside Europe, according to Hofstede's findings. In general, it is difficult to make universally valid statements because the qualitative sample of six companies is relatively small.
6.3 Future research
The authors of this bachelor thesis encourage researchers to further investigate this largely unexplored area of shared leadership in terms of disruptive innovation. There are various ways of providing a more comprehensive scientific basis for this topic. Four proposals are presented in the following section:

1.) Quantitative study on the impact of shared leadership on disruptive innovation in International New Ventures. This could give the topic more validity and it would be possible to investigate whether the results are significant.

2.) General study on the influence of shared leadership on disruptive innovation without a focus on international new ventures. It would be very interesting to investigate which results would be visible in international innovatie companies like Apple or Tesla, for example.

3.) Since in this bachelor thesis all examined companies had shared leadership from the beginning, it would be favourable to see how the findings would look like for companies that have implemented shared leadership.

4.) As mentioned in the conclusion, it would be sensible to further study the influence of the intrapreneur on disruptive innovation in teams with shared leadership.

Finally, at the beginning of any innovation process lies an opportunity that needs to be recognised and exploited. As such there is a visible relationship between innovation and opportunities. By combining these two fields, researchers are able to gain a clearer understanding of where innovation comes from. This in turn benefits the private sector by increasing the competitiveness through mounting possibilities of innovation.
7 References

7.1 Interview participants

1. Dalmane, Lelde; Marketing Content Manager at Catchbox; Skype-interview; 2018-05-03.
2. Monk, Andrew; Co-founder of ioLight; Skype-interview; 2018-05-03
3. Philipps, Irene; Director of business processes at Disruptive Technologies; Skype-interview; 2018-05-04
4. Vanoni, Matthias; Co-founder and CEO of Biowatch; Skype-interview; 2018-05-05
5. Zünd, Marc; Co-founder and CEO of Vigilitech; Skype-interview; 2018-05-07
6. Norman, Adam; COO of Happy Patients; Skype-interview; 2018-05-07

7.2 Written References


Pearce, C. L. & Wassenaar, C. L., 2014. Leadership is like fine wine: It is meant to be shared, globally. *Organizational Dynamics*, pp. 9-16.


Appendix
Interview questions:
These questions are only a guideline for the interview. Since we follow an explorative approach, we try to influence our interviewees as little as possible.

Background:
- Do you wish your answers to remain anonymous?
- Short information about yourself (What is your position? What are your tasks? How long have you worked for this company?)
- Briefly explain the company and the history behind it (Are you currently active in an international context? If not, do you plan to do so in the near future? Do you briefly describe your company? How many people work in your organization? Are there mixed cultures/nationalities? Who are your biggest competitors?)

Leadership:
- What is the approach on leadership in your company?
- Are there horizontal structures in the organization or in the teams?
- How do these structures work? Within projects? business areas?
- In your opinion, why did the company decide to implement management in this way?
- What positive and negative effects have you observed through your leadership approach?

Innovation:
- How did the first idea come about?
- Do you have a specific innovation team?
- Guide us through the innovation process. How are critical decisions made?
- What are the most important innovation drivers for you?
- What connection do you see between your form of leadership and innovation?
- Are there systems that specifically want to increase innovation and its process? For example, Google gives employees one creative hour a week to follow any interest. This was specifically done to improve innovation and creativity.

New international companies:
- Why did you choose an international market?
- What influence does the aspect of internationality have on innovation? Legally or technologically, for example?
- Where are there organizational changes for the international character?
- Which barriers can be identified in this context?