



UNIVERSITY OF GOTHENBURG
SCHOOL OF BUSINESS, ECONOMICS AND LAW

Product Innovation in Equestrian Sports

- *A qualitative multiple case study about how product innovation evolves in the Swedish equine industry*

Author: Josefine Berggren
Supervisor: Daniel Ljungberg
GM0460 V18, Graduate School

PRODUCT INNOVATION IN EQUESTRIAN SPORTS

By Josefine Berggren

© Josefine Berggren

School of Business, Economics and Law, University of Gothenburg, Vasagatan 1
P.O Box 600, SE 40530 Gothenburg, Sweden

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Contact: mail.josefine.berggren@gmail.com

Abstract

Innovation in the equine industry has been seen as existing to a very little degree since many of the activities surrounding the horse have been looking the same during the last decades. At the same time, half a million people in Sweden are horseback riding and additionally half a million people are in contact with horses regularly. This means that it is possible to expect that there is a lot of potential for innovation. Based on that information, this study aims to investigate how product innovation evolve in the Swedish equine industry. This has been done by using a qualitative multiple case study, including desk research to identify the dynamics of the equine industry, interviews with four experts as well as interviews with three case companies that is considered to pursue an innovative idea.

The analysis of the empirical findings leads to the conclusion that product innovation evolves from independent start-ups that possess market, business and technological knowledge. They are financed in a few different ways, but common for all of the case companies is that they all are to some extent backed by external funding and have had no issues with finding access to funding. Moreover, the key informants together with the case companies agree upon the large potential of innovation still remaining in the equine industry, leading to many potentially innovative ideas that remains to be realized.

Keywords: *Product innovation, knowledge intensive entrepreneurship, horse tech, financing of innovative start-up ventures, knowledge, societal influence, equine industry*

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1. Introduction

This chapter will provide an explanation of the topic, namely innovation in equestrian sports, together with a discussion around why it is relevant to investigate the chosen area. In addition, a clarification of what will be studied will be provided, in order to give an understanding of the structure and the scope of the thesis.

1.1 Introduction

Horses have been a part of the society in most countries during centuries. They have been used for agricultural purposes back in the days and they still do in some parts of the world. However, here in Sweden they are mostly used for horseback riding or trotting depending on what breed that is discussed. Moreover, horseback riding is the second largest sport in Sweden for people between 7-25 year olds, and the largest sport in terms of para riding. Equestrian sports involves half a million Swedes that are active horseback riders, and an additional half a million people are in contact with horses regularly (Holgersson, 2016). Sweden is the country with the second largest horse intensity in Europe and when including all activities around horses, the industry has 46 billion Swedish crowns in turnover each year (Holgersson, 2016). In order to gain understanding of the size of the industry, around 28 000 people are employed within the horse industry, excluding the segment of goods and services (Arbetsmarknad och yrken inom svensk hästnäring, 2010). This gives an indication of the general interest for horses in Sweden which also explains the demand of products and services around horses.

One of the organizations that is working with improving the horse industry in different ways, is Hästnäringens Nationella Stiftelse (hereafter mentioned as HNS). Since the equine industry includes several activities and different kind of sports it is important to define what the equine industry actually is. HNS define the equine industry as being “all activities that is based on the usage and possession of horses including both leisure and professional enterprises as well as the turnover of horse related products and services (Holgersson, p2, 2016). Moreover, they describe the industry as consisting of small enterprises with few employees where the business idea most often includes various activities that is combined in order to get better likelihood to be profitable (Arbetsmarknad och yrken inom svensk hästnäring, 2010). At the same time, the equine industry could be seen as a combination of being within the agricultural field as well as being a sport. Additionally, some parts of the industry, such as the veterinarian sector, includes high-tech equipment while the more traditional activities around the horse could be considered being low-tech. Interestingly, the financial structure for veterinary clinics also differ from other companies in the industry in the way that many of the veterinary clinics are nowadays owned and driven by a larger company that includes the small clinics.

Equestrian sports are surrounded with several products and services that support the activities around the horse and rider. Examples of this can be the stable that the horse owner rent for

keeping the horses, saddles and bridles, horse trailers, training sessions, veterinary services, fodder production and farrier services. However, surprisingly little of these activities have been digitalized even though this is a general trend in the rest of the society which makes it possible to conclude that many parts of the industry could be seen as a low-tech. When having that said, it of course assumes that the equine industry contains possible areas with potential to become digitalized. However, all physical activities surrounding the horse might not include that possibility, but that does not exclude the possibility for developing new digital products and services. The companies and organizations providing these kind of products and services, digital or not, are of different kinds such as lifestyle entrepreneurs, necessity entrepreneurs, non-profit organizations and profit-maximizing companies. Regardless of which type, in general many products and services have been looking the same during the last decades (Holgersson, 2016).

A strategic agenda for innovation in the equine industry has been presented by Vinnova in collaboration with different actors in the industry. Found in this agenda, is a roadmap describing a way forward to succeed in creating a sustainable industry consisting of development and innovations. In addition, this study will focus on two areas. Firstly, a general estimation of the entire industry in connection to innovation will be performed by reading documents and talking to four key informants. Secondly, a deep dive into three case companies providing innovative solutions will be done by semi-structured interviews with founders of the companies. With the information that there is a need for innovation in the equine industry (Holgersson, 2016), the problem discussion below will further describe the problematization in this specific setting.

1.2 Problem Discussion

Even though a need for innovation has been presented above, no previous research of innovation in the equine industry has been found. This creates difficulties in getting an overview of what innovations that can be found as well as how far the development of innovations in this setting has come. At the same time, the lack of information also leads to that there is no previous information around what the process of innovation looks like. In addition, technology is changing the landscape in many industries, which affects both incumbents and start-ups, and it is possible to argue that this change has started to happen or will happen in the near future also in the equine industry. The activities surrounding the horse have mainly been looking the same for decades, and since the sport has many practitioners, the potential for innovation and implementations of new technology is estimated to be high. Therefore, a relevant assumption is that start-up companies will be trying to realize innovative opportunities within the industry. In addition, Buenstorf (2016) stated that innovative start-ups are often seen as the ones having the possibility to act upon opportunities and by that change existing industries meanwhile incumbents are unwilling or unable to do so. Knowledge intensive entrepreneurship is therefore associated with the realization of these innovative ideas, and can be defined as new firms that involve organizational, technological

or scientific knowledge in new ways when pursuing innovative ideas (Malerba & McKelvey, 2016; Holmén et al., 2007).

In order to manage companies and organizations that have the ability to be innovative, certain factors are crucial. To accomplish a deeper understanding of firms capability of being innovative in the equine industry, the main focus will be on the early phases of creating knowledge intensive ventures. For example, the knowledge input for innovative ventures will have great impact on how ideas are discovered, developed and managed. Financing will also in many cases determine the development of the early stages of innovation, and maybe most important of all, decide whether the initiative may continue or not. Moreover, founder characteristics and societal collaboration also has its role in the development of innovations. These aspects has been described as important for knowledge intensive entrepreneurship (hereafter referred to as KIE) that includes young firms that are innovative. By using the first part of the KIE model presented by McKelvey & Heidemann Lassen (2013), which can be found in the theory section, an understanding of the connection between those aspects are enabled, rather than focusing very strictly on a narrow field of entrepreneurship. This is also connected to that very little research in this industry has been made, which gives several opportunities for investigating connections between the different areas. To get a better understanding of how innovation evolves in the equine industry, the above mentioned factors need to be further investigated.

1.3 Research Question

The objective of this study is to gain a deeper understanding of how innovation is created within equestrian sports by doing one of the first explorative studies of innovation in the equine industry. In detail, this will include interviewing experts working at organizations related to development of the business environment in the equine industry. Moreover, an investigation of different aspects of the start-up phase of companies will also take place while interviewing case companies that are being innovative. The following research question has been stated as a guideline for the study.

How does product innovation evolve in the Swedish equine industry?

Equestrian sports, in the context of this study, will be defined as including all sports related to horses in Sweden. This includes show jumping, dressage, eventing, para-equestrian, mounted games, working equitation, reining, vaulting, horse racing and horse driving. In relation to this, several companies provide products and services that are necessary in order to perform the different activities in equestrian sports. Together, the different disciplines within sports and the related products and services, is hereafter referred to as the equine industry.

The aim of this study is to connect innovation and the equine industry by providing understanding about how it has developed. This will contribute mostly to the sector of the equine industry, as well as contributing to the innovation literature since the study is

investigating innovation in a new setting. In this study, the main focus will be the interaction of knowledge intensive ventures and their external environment. This will be demonstrated by looking at factors such as knowledge input, financing, characteristics of the founder and societal impact on the venture. Focus will be profit-driven companies since the study is from a business perspective. Furthermore, the focus will also be on new and innovative firms in order to answer the research question.

1.4 Limitations

The innovation literature presents many different types of innovation which can be applied in several settings or industries. However, this study is focusing on product innovation only, based on that it would be interesting to compare such ventures as well as because the previously stated need for innovation when it comes to products. At the same time, a decision has been made to focus on the Swedish equine market, which also allows for understanding this geographical area in terms of incubators and potential clusters. When looking at product innovation in the Swedish equine industry, the part around veterinary products has been excluded. The reason for that decision was based on that the veterinary sector differs from the general equine industry in various ways. The differences are about the usage of technology as well as the financial structure. Therefore, there is reason to believe that several innovations could be found in that sector. However, in order to make relevant comparisons between the case companies, the veterinary sector has been excluded because of the many differences.

2. Theory

This chapter will discuss literature relevant to the previously stated research question. The chapter initially explain concepts of innovation and entrepreneurship, followed by a description of product innovation specifically as well as about KIE. The following part about innovation and entrepreneurship will be supporting the understanding of the phenomena in the equine setting, and the following part about KIE will be used as a structure for understanding the case companies.

2.1 Innovation and Entrepreneurship

In order to investigate innovation, a clear view on what innovation is, and is not, is crucial to understand the scope and the impact it might have. Furthermore, it allows for a common ground for discussing and understanding the topic. The following definition of technical innovation is provided by Shilling (p1, 2013):

“The act of introducing a new device, method, or material for application to commercial or practical objectives”

According to Fagerberg and Mowery (2006), innovation is nothing new to our society. Instead, innovation can be demonstrated by many things that are included in most people's lifestyle, such as travelling by airplane or storing food in refrigerators. Moreover, the same authors make a distinction between inventions and innovations. They argue that an invention is the first occurrence of an idea for a new product or process. At the same time, innovation is presented as the first attempt to carry out the idea in practice (Fagerberg & Mowery, 2006).

Another distinction that can be made within the innovation literature, is between radical innovation and incremental innovation. Radical innovation includes a high level of new knowledge while incremental innovation includes low levels of innovation (Dewar & Dutton, 1986). Another view on incremental and radical innovation is that it is connected to how different the new product or process is from the old one (Fagerberg, Mowery & Nelson, 2005). The same authors describe incremental innovations to be consisting of continuous improvements and radical innovations to often be technological revolutions with a significant impact.

Innovations are developed by both incumbents and start-up firms, but they may act in different ways (Buenstorf, 2015). Start-up firms are often seen as able to act upon innovative opportunities while incumbents are sometimes seen as unwilling or unable to develop innovations. The incumbents role in contributing to innovation, is by diversify and innovate in related industries, by being seedbeds of innovative spin-offs, by acquiring innovative start-ups and by performing basic research (Buenstorf, 2015).

When having the definition of innovation presented above, it is relevant to present the definition of entrepreneurship since they are often connected. Carlsson et al. (2013) are using the following definition of entrepreneurship:

“Entrepreneurship refers primarily to an economic function that is carried out, by individuals, entrepreneurs, acting independently and within organizations, to perceive and create new opportunities and to introduce their ideas into the market, under uncertainty, by making decisions about locations, product design, resource use, institutions, and reward systems. The entrepreneurial activity and the entrepreneurial ventures are influenced by their socio-economic environment, and they result ultimately in economic growth and human welfare.”

Additionally, the entrepreneur can be differentiated from the small business owner. It is often argued that the entrepreneur is running its business with the purpose to achieve profit and growth. To achieve that goal, innovative behaviour together with strategic management practices is often used. In opposite to this, the small business owner is managing its business with the purpose to furthering personal goals. Moreover, the small business owner view the business as something connected to the owners personality and also family needs rather than profit and growth such as for the entrepreneur. (Carland et al., 1984)

The differentiation of the entrepreneur and the small business owner discussed above could be related to different categories of entrepreneurs presented by Ateljevic and Doorne (2000). The lifestyle entrepreneurs are often running its business based on their own interest, which also often means less focus on the financial reward (Andersson Cederholm & Hultman, 2010).

Innovation can be found in several settings, and one way of getting a more detailed understanding is to divide different innovations into categories. One of the first researchers of innovation named Schumpeter, has been using new products, new methods of production, new sources of supply, the exploitation of new markets and new ways to organize business as different types of innovation (Fagerberg, Mowery & Nelson, 2005). As mentioned earlier, this study is focusing on new products that are being innovative. The underlying reason for this decision is that this kind of innovation has not been existing in the equine industry previously, which makes it interesting to investigate. In addition, the decision to focus on only one type of innovation was also based on that it was important to be able to compare the empirical findings from the case companies, which was more reliable when comparing the same kind of innovation. The following chapter will describe product innovation in detail.

2.2 Product innovation

“A product innovation is the introduction of a good or service that is new or significantly improved with respect to its characteristics or intended uses. This includes significant

improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics.” (Oslo Manual, p48, 2005)

To begin with, the authors refer to both goods and services when using the concept of product innovation (*Oslo Manual, 2005*). The following paragraphs describes innovation of goods and services in detail.

2.2.1 Innovation of Goods

Product innovation is about combining knowledge or technology in a new way. To be more specific, product innovation can be created through the usage of new materials, components but also other components that might affect the performance of the product. Moreover, other examples of what can create product innovations could be the product efficiency, new functions or the introduction of a totally new product. When it comes to product design, it is very closely related to product innovation. However, the authors draw a limit between minor design changes that is not included as a product innovation, and design changes that leads to an improvement in the product’s functional characteristics which is included within the definition presented above.

2.2.2 Service Innovation

According to Dodgson, M. et al. (2014), services can be defined by four factors. The first one is intangibility, the second one is inseparability, the third one is perishable and the fourth one is heterogeneity. The first factor is about that services is not physical things, and can therefore not be touched. Inseparability on the other hand, is more about that it is difficult to separate the service from the process when it is being created. That means that it is often produced at the same time as it is being consumed. The third factor that services are perishable, is in a way connected to the first factor. Since a service is intangible, it will also be very difficult to stock and store the service. This has implications when it comes to managing demand and supply in terms of that it will be difficult to adapt to both higher and lower demand of the service. Lastly, heterogeneity reflects upon that it is very difficult to standardize services. Since the customer is most often involved in the production process, and sometimes together with other customers as well, it is highly difficult to make sure that every service delivery ends up being identical (Dodgson, M. et al., 2014).

The different attributes of a service has a few implications when it comes to innovation in this area (Dodgson, M. et al., 2014). This can be explained by how services are different from goods. The first way that services differ from goods, is because of the inseparability of services that leads to that service innovation often includes major changes in the business model. That has great impact on the core business of the company itself, and also the employees that are often included as one of the features in the service. Because of the complexity and the uncertainties that service innovation might involve, Dodgson, M. et al. (2014) explain how that sometimes creates resistance to change. Furthermore, service innovation is often seen as driven by new technologies (Tether, 2005) which may add even

more complexity to the situation. Additionally, this might relate to the fact that many companies succeed in making incremental improvements to their services, but few companies succeed in creating new markets for services (Berry, Leonard L. et al., 2006).

According to Dodgson, M. et al. (2014), the vast majority of innovation literature is related to product innovation as opposed to service innovation. One potential reason to that could be that the servitization of different industries is ongoing and therefore relevant today and has not yet been studied to the same extent. According to that, the reason for a late shift is that it is correlated with the development of the actual industries. One could still argue that services are well established already today, and that the literature should be more up to date. However, I think this discrepancy is depending on two reasons. First of all, it seems like since service innovation is more advanced and complex in comparison to product innovation, the literature for this topic could be more rare to find. Second of all, servitization is still a rather new phenomena, or at least rather contemporary, which leads to that it will not be as easy to study. If this two arguments hold, we will probably see more studies of the topic in the near future.

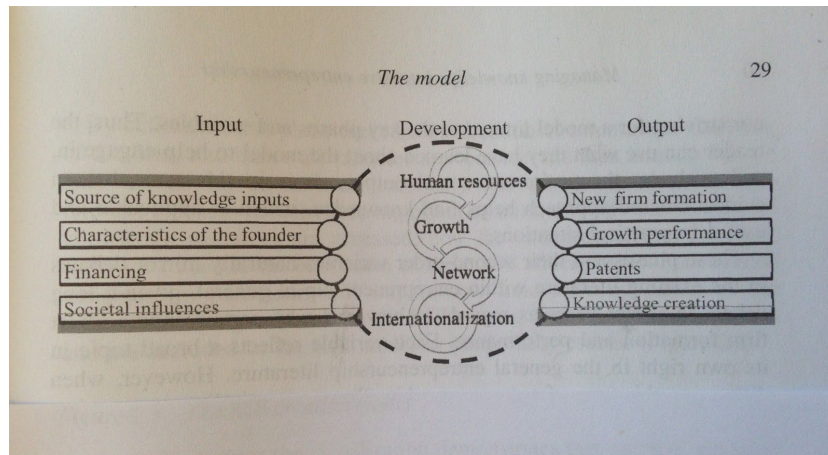
2.3 KIE Literature

In order to investigate how product innovation evolve in the equine industry, certain literature can be used to enhance the understanding. In this case, literature dealing with knowledge intensive entrepreneurship has been examined as a foundation for grasping the complexity of entrepreneurship. McKelvey and Heidemann Lassen (2013) argue that KIEs is more than just a venture, and that it has implications for wealth creation and societal growth. This type of literature were also chosen since it is related to a specific type of entrepreneurship which is more suitable for the current development of the equine industry. An example of the interesting connection between the equine industry and KIE, is that entrepreneurs has the possibility to find opportunities based on the existence of market imperfections (McKelvey & Heidemann Lassen, 2013). Because of that, entrepreneurs can capture price differentials and introduce new products and services which will be studied in the equine industry in this thesis.

The KIE model is a structured way of explaining and understanding the different stages of managing knowledge intensive entrepreneurship. The authors, McKelvey and Heidemann Lassen (2013), refers to KIE as the over all phenomena of knowledge intensive entrepreneurship, and KIE venture as the entrepreneurial initiative or company. To understand this type of entrepreneurship, a few distinctions has been made. First of all, this framework focuses on the business perspective on entrepreneurship. Moreover, to understand what kind of entrepreneurship that is relevant for KIE, the authors focuses upon innovative companies that is new firms and has significant knowledge intensity and by that exploits innovative opportunities in many different sectors. Therefore, firms older than eight years are excluded, as well as necessity and lifestyle entrepreneurs. What is meant by innovative companies is that a new product or service has the possibility to be sold, and that it often occurs in a new market. The innovative opportunities can be created in different ways, and

examples of that can be to link business, market and technological knowledge in different ways that meet the market needs. Another way can be to use internal and external factors in the development in a venture, and to access knowledge and resources through networks. Figure 1 below includes an illustration of the KIE creation model, where this study focus on the four input factors.

Figure 1. The KIE creation model



Furthermore, a managerial view is applied on the process, and this type of entrepreneurship can be found in many different sectors such as high-tech industries, low-tech industries and the service sector. The outcome of KIE ventures, with the limitation explained above, is to help stimulate economic growth and societal well-being, since the KIE phenomena creates more jobs and leads to both creativity and growth.

As mentioned in the first paragraph explaining KIE, the phenomena can be found in several industries. McKelvey and Heidemann Lassen (2013) continues with describing this further, and explains that KIE can be found in both low-tech and high-tech industries. KIE in low-tech industries can be described as having potential for growth products and services, having opportunities for organizational innovation and potential of implementing science-based activities and technologies. At the same time, high-tech industries can be characterized as consisting of product innovations of new technologies which is also connected to that they in general are R&D based (McKelvey and Heidemann Lassen, 2013). In addition, Hirsch-Kreinsen, Jacobson and Robertson (2006) argues that innovation in low-tech and high-tech industries are highly connected to each other. The reason for that is because very few innovations are based upon totally new scientific knowledge. Instead, the practical knowledge about relevant problems possessed by low-tech firms, are as important for high tech firms and their ability to innovate.

When talking about innovative opportunities, a few different elements are mentioned as important in order to identify, act upon and realize the potential according to Holmén et al. (2007). The same authors argue that the innovative opportunity needs to consist of at least

one of these elements that are an economic value for someone, a possibility that the resources needed to realize the opportunity can be mobilized and a possibility that at least some part of the generated value can be appropriated by the actor pursuing the opportunity.

The first part of the KIE model is divided upon four areas. The focus is on resources that can be used and combined in different ways, leading to new opportunities and eventually ventures. The resources discussed in the model includes both previous experiences as well as education, networks and general skills. When realizing the innovative idea in practice, the organization relies heavily in external resources (Fagerberg & Mowery, 2006), which can be seen as strongly related to the model presented below. The following section will describe the four areas in detail, and the reason for choosing to focus on the first part of the KIE model is that the case companies in this study are young ventures which makes it relevant to study the phase that they recently have been through.

2.2.1 Source of the knowledge inputs

The first factor that is included in the input part of the KIE model is called source of the knowledge inputs. Cook (1999) makes a distinction between knowledge and knowing, where knowledge is about possession and knowing is about sharing the knowledge and interaction between the knower and the rest of the world. Knowledge and the utilization of it is described as important for innovation activities in general (Chesbrough 2003), and especially for KIE ventures. The authors (McKelvey & Heidemann Lassen, 2013) are defining three types of knowledge that is relevant in KIE settings. These are presented below.

Scientific and technological knowledge that leads to new ideas and opportunities.

Market knowledge as related to the market and to the customers and users.

Business knowledge as related to how to manage and structure internal firm processes.

In relation to the different types of knowledge presented above, the KIE ventures can evolve in various ways. Firstly, they can evolve as something called corporate spin-off with the definition that they come from a large established company (McKelvey & Heidemann Lassen, 2013). The parent company can take place as being very involved, and when it comes to financing, control and ownership they can also decide not to be as involved. This type of spin-off can be a planned venture between the large company and the founder, but can also emerge when an employee quits its job for starting a new company. Another way of creating a new company is by university spin-offs which includes academic researchers and students starting new ventures (McKelvey & Heidemann Lassen, 2013). In this type of spin-off, the relationship with the parent organization, in this case the university, may continue if the researchers stay at the university and if the students remain students while starting the venture.

The third way of starting a new venture can be divided into something called independent start-ups. This type of start-up emerge from an individual that can be both experienced or inexperienced, and does not come from any related industry or organization (McKelvey & Heidemann Lassen, 2013). Therefore, a parent organization is often missing, and the type of venture can be found in all industries. However, it is more common to find this type in low-tech industries and more traditional industries. In connection to that, work experience seems to have more importance than connection to industry or a parent organization.

To sum up the part about knowledge, this categorization allows for a structured way of considering the impact of knowledge. Combining knowledge also includes interaction between opportunities, internal processes and the external environment such as innovation ecosystem in order for the KIE venture to succeed (McKelvey & Heidemann Lassen, 2013).

2.2.2 Characteristics of the founder

The founder is referred to as the team or the person who is starting a new venture. The authors (McKelvey & Heidemann Lassen, 2013) are presenting a discussion around whether it is possible to describe the founder by personality traits or characteristics. What they agree on is that some aspects of the founder can be grounded in theory, and that the need of power, need for affiliation and need for achievement is common for many of the founders. Another author, Rotter (1975), is explaining the personal characteristics of the founders as being connected to something called internal locus of control. That includes the need for autonomy, personal charisma, and independence and personal development.

Moreover, it is stated that entrepreneurs often have a more positive view on the role as an entrepreneur and that the founder often is correct in the analysis of competition but also often fails in evaluating or forecasting their own chances in success. At the same time, the risk-taking aspect does not seem to differ from managers in general. When it comes to education among founders, having a secondary degree positively affects the likelihood of being a nascent entrepreneur. However, having a masters or a Phd degree does not lead to any increase in entrepreneurship according to McKelvey and Heidemann Lassen (2013).

2.2.3 Financing

The financing of KIE ventures can be solved in different ways, and it is described as crucial for being able to mobilize the innovative opportunity. Moreover, access to capital is most often one of the important issues to solve for entrepreneurial start-up firms (Denis, 2004). Since KIE ventures are seen as involving a lot of risk and generally do not have any revenue streams or tangible assets, debt is most often not a financing option (Denis, 2004). However, own financial resources, funding from a family member, funding from previous employer, venture capital, funding from a bank, public funding and european union funding are all examples for financing of KIE ventures provided by McKelvey and Heidemann Lassen (2013). As noticed above, using funding from a bank is seen as an option by McKelvey and Heidemann Lassen (2013) while it is described as uncommon by Denis (2004).

One of the financing options that is focused more upon, is venture capital funding that is a financial intermediary that invests directly in private portfolio companies to finance its internal growth (McKelvey & Heidemann Lassen, 2013). That means that when venture capitalists are being involved, it will not be possible to trade the company on a public exchange. This is unless the venture capitalist is about to exit the investment, which is often made through a trade or an IPO since the goal of the venture capitalist is to maximize the financial return as a compensation for the risk taking. The venture capitalist often takes an active role in helping and supporting the companies. However, venture capital funding for KIEs are uncommon at early stages of the development.

Another type of financing that is mentioned above, is corporate venture capital (CVC). The definition of CVC is programmes in established firms that make investments in entrepreneurial companies. The purpose for these companies to invest in risky venture can vary, but one purpose could be to maintain control in-house or to find alternative uses for interesting in-house ideas. By doing so, the established company will gain insights in new technologies, and it might be the case that the large company will become strategic partners with the entrepreneurial initiative. At the same time, the large company might possess important information or knowledge about the business, market or technology that can be useful for the KIE venture. Furthermore, it is found that CVC most often invests in the expansion phase or a later stage (McKelvey & Heidemann Lassen, 2013).

2.2.4 Societal influences

This part of the model can be divided into two parts according to McKelvey and Heidemann Lassen (2013). In this section, the first part is about incubators, followed by the second part about clusters.

McKelvey and Lassen (2013) are describing the role as an incubator to be not only accommodating for the venture, but also to be the link between technology and finance as well as helping by offering hands-on management. Furthermore, the authors present a discussion regarding the purpose of incubators. Firstly they discuss the purpose to be the capacity to reduce start-up costs for small ventures or initiatives. While doing that, the incubator would target local ventures that are aiming for the local market which requires a small amount of funding. By focusing on this specific segment, the incubator would be able to support by financing but also logistical assets. A second purpose that is discussed is about the ability to accelerate the start-up process of very highly promised initiatives. And by very promising initiatives, it is focused upon ventures or initiatives that is appealing in terms of the size of investment as well as the speed of the development of the initiative.

When discussing the role and purpose of the incubator, four different types are defined. These are business innovation centres, university business incubators, independent private incubators and corporate private incubators. Regarding how these different types are

operating, it is explained that the private incubators have their main focus on accelerating the start-up process and reducing the time until the initiatives are profitable, while the public incubators most often focus on promoting entrepreneurial activities and also to reduce the cost of start-ups.

The second part of societal influences is described as clusters. They are geographical areas, can be a town or a region, that often provides a strong link between financing and the cluster itself. This connection is often found among high-tech firms, and a common example of that is the silicon model. That example is about how many small firms are created within a limited geographical area, and with an assumption that many of them are financed by venture capital. These clusters can also be country specific in terms of that the country has, deliberately or not, created certain capabilities within an area (McKelvey & Heidemann Lassen, 2013).

2.4 Summary of Theory

To conclude the theory presented above, the part about innovation and entrepreneurship aimed to work as a foundation for the more detailed theory about product innovation and knowledge intensive entrepreneurship. The connection between innovation and entrepreneurship has been important in order to continue this study, especially since the equine industry has been very mature in previous ways of carrying out the activities around the horse, at the same time that the more digitalized and technology intensive new venture are operating in a very young market. Therefore, innovation in this setting has been closely related to entrepreneurship, especially knowledge intensive entrepreneurship. When understanding the theoretical structure and definition of innovation and entrepreneurship, a decision was made to focus on KIE for analysing the empiric material. In the next section, a detailed description of the methodology will be introduced.

3. Methodology

The following chapter will describe how the study has been performed, as well as give further explanation of when and why the study is done in the way it is. Furthermore, the final part of this chapter will explain how the material has been processed and analyzed.

3.1 Research Strategy

In order to answer the research question, a decision has been made to focus on a qualitative study including both primary and secondary data collection. By using a qualitative method, it is possible to gain a deep understanding about innovation in equestrian sports which is especially suitable when considering a research question that starts with “how” as in this case (Bryman & Bell, 2005). Qualitative case studies are also highlighted as highly suitable when examining a topic with high levels of novelty (Yin, 2003). Furthermore, the study has an inductive approach and focuses on how innovation is created in the equine industry. This has involved both interviewing key informants in the industry as well as interviewing companies that are including a product innovation. That involved reviewing companies based on information from websites in order to classify whether the company is innovative or not, and if innovative, in what way and in terms of what kind of innovation. While doing so, the purpose was to compare both similarities and differences in the start-up phase of these ventures according to the previously presented theories.

Possible drawbacks of chosen research strategy is that it includes a risk that the information and result is subjective. At the same time, when doing a retrospective study, it is important to remember that the respondents might not remember information correctly or simply changing the activities in hindsight which has been considered when analyzing the empirical findings.

3.2 Research Design

The purpose of the study is to investigate how innovation is created within the equine industry. As a first step in doing so, a literature study has been made. The main focus has been on understanding the business environment in relation to the industry as well as how to manage these innovative ventures. To reach that level of understanding, the initial phase of the thesis also included reviewing documents and reports published in the area of equestrian sports to make sure that capture the ongoing change and transformation in the industry.

Moreover, four interviews with experts in the equine industry has been interviewed. This has been made through unstructured interviews that allowed for a discussion around horses and innovation. Accordingly, the respondents gave their view on the development within the equestrian sports, in connection with their current role at different organizations.

In addition, three case studies have been conducted, based on questions around the different parts in the KIE model. Using the structure of the KIE model allows for a better comparison of both differences and similarities between the companies since they case companies have

been exposed to the same questions to a large extent. The initial strategy was to perform four interviews with different companies, ideally with companies that has developed different kinds of innovations within the range of different product innovations. In that way, the case companies would provide unique insight, something that is encouraged by Yin (2003) when conducting a multiple case study.

3.3 Research Methods

3.3.1 Secondary Data Collection

The literature review has been conducted by searching for literature in several ways to find suitable theories as a foundation of this study. First of all, since the innovation literature of relevance for this thesis might be seen as basic in terms of being slightly broad and general for all knowledge intensive ventures, books about innovation have been reviewed at first. This has been done by searching at the “super search” function at the School of Business, Economics and Law at Gothenburg University. Meanwhile, the literature found by using “super search” has been compared to the literature that has been used in the innovation courses of the “Innovation and Industrial Management” program at the same university. The reason for this has been to navigate within the vast amount of literature, and by comparing with literature in the program, also get access to the more experienced researchers’ decision-making in choosing relevant and reliable literature. Also, the literature in the program has been reviewed with very careful consideration in order to find relevant literature for this very topic.

After reviewing innovation literature using the method described above, insights regarding how to narrow down the scope was gained, which lead to a new search focused specifically on knowledge intensive entrepreneurship. This decision was made based on reviewed literature, but also on the fact that the innovations found in the equine industry originated from young companies which made literature of entrepreneurship more interesting than literature on innovation.

To understand the ongoing development of innovations within equestrian sports, documents directed towards the equine industry have been studied. These documents vary from being reports about science within equestrian related areas, as well as being websites with information regarding initiatives from both non-profit organizations and profit-maximizing ones. Furthermore, an attempt to capture the complexity of the industry has been made through carefully reading documents such as previous theses by students at all kinds of universities. In order to identify these kind of documents, different websites and search methods have been used. First of all, search words such as “innovation ridsport”, “digitalisering ridsport”, “uppfinningar ridsport”, “teknik+häst” and “företagande ridsport” has been used when searching has been made using google. In addition, the websites of Svenska ridsportförbundet and HNS have been carefully been read through with the ambition to look for current potential innovations.

Another way of finding these kind of reports has been to look at websites publishing news, such as Hippijon and Tidningen Ridsport. This resulted in finding eight interesting reports about technology and innovation in the equine industry, and out of these eight reports, four of them have been suitable to use in this study. The four reports have been chosen based on that they are applying a business perspective to the equine setting. On the other hand, reports that have been excluded have been lacking the business perspective and have had more technical focus with an invention focus rather than on innovation. The following table presents the main documents that have been used, together with information regarding the author and year of publication.

Table 1. Reports related to the equine industry

Title	Author	Year of Publication
Hållbar hästnäring	Pernilla Holgersson	2016
With a little help from my friends: relational work in leisure-related enterprising	Erika Andersson Cederholm, Malin Åkerström	2016
Hästgården - mellan familjeprosjekt och livsstilsföretag	Erika Andersson Cederholm, Malin Åkerström	2013
Arbetsmarknad och yrken inom svensk hästnäring	HNS	2010

In addition to horse related reports and literature about innovation and entrepreneurship, secondary data from the website of Stiftelsen Hästforskning has been used. Information from this particular website has enabled a categorization of different areas where Stiftelsen Hästforskning has been financing research projects. The website were identified when finding reports at the webpage of HNS, that were the founders of Stiftelsen hästforskning. When finding the information of what project Stiftelsen Hästforskning had been financing at their webpage, the data from 2004-2017 were categorized depending on what type of research that had been made.

3.3.2 Primary Data Collection

The selection of respondents has been based on a few criterias in connection to the KIE model. The criterias that have been used are whether the company is innovative, younger than eight years, the product or service is available on the market and being a profit-maximizing company. First of all, a set of companies have been found through previous knowledge of the industry. Another set of companies were found by involving other riders to contribute with companies they found innovative and finally through searching on the internet for articles and different company websites within the industry. When having collected that information, the companies were categorized by if they fulfill the criterias or not. After doing so, ten companies still remained, and a decision was made to invite four companies fulfilling these

criteria to participate in this study. Furthermore, the focus in this study is on companies that is doing product innovation, which also means that innovation of other types has been excluded. And finally, the last criteria was about choosing companies that were categorized as somewhat radical which also means that companies providing incremental innovations were excluded. It would be possible to argue that the way of finding these companies could have been done more traditionally by using databases or other industry specific information. However, it turned out not to be an option for this study, primarily because the lack of statistics for this very narrow field. Therefore, mixed methods, i.e. using previous knowledge, talking to other riders and searching the internet, were adopted in order to achieve the goal of finding companies in this industry fulfilling all previous mentioned criteria.

After identifying companies fulfilling the previously stated criteria, a second selection was made based on what kind of innovation that the company provided. With the attempt to try to find companies ranging from service innovation to innovation of goods, they were all included in the definition of product innovation provided by the OECD. The aim was to find companies that could represent pure service innovations and pure innovation of goods, together with companies providing innovation that were in some way located in the middle of these two.

When being done with the two different ways of selecting companies of relevance for this study, the total amount of companies ended up being ten. Out of these ten companies, four were invited to participate in the study and three of them accepted the invitation. The criteria that the company should be aiming for profit and growth was sometimes difficult to evaluate based on website information. As a solution, an assumption was made that companies being backed by venture capital firm would also be fulfilling the criteria. In order to get in contact with these companies, contact persons have been identified by using their websites. By finding email addresses to the companies, all of them were invited to participate in the study. In the first email, information regarding the purpose of the study and a brief introduction to the authors' background were provided. At the same time, a decision was made to avoid sending the invitations during early Mondays or Fridays, with the expectation that it will be a good timing to receive the invitation.

When it comes to the selection of the respondents for the unstructured interviews, the interviewees were selected by their role at work together with their previous experiences. The methodology of finding these interviewees started out by finding websites of organizations that in some way work with improving the conditions of the equine industry. Four different organizations were identified, consisting of Svenska Ridsportförbundet, Hästnäringens Nationella Stiftelse, LRF Häst, Lund University and Vinnova. By contacting each of these organizations' manager, access to the right person within the organization could be offered. This finally lead to four unstructured interviews, during which the author took notes.

Table 2. Interviews with key informants

Organization	Interviewee	Job Title	Date	Time
LRF Häst	Erica Lindberg	Manager	13th of February 2018	40 min
HNS	Sara Westholm	Responsible for labor market conditions	22nd of February 2018	60 min
Lund University	Erika Andersson Cederholm	Researcher	26th of February 2018	50 min
Ridsportens Innovationer	Madeleine Malmsten	Project Leader	4th of April 2018	60 min

Out of the four companies that were invited as potential case companies, three companies agreed to participate. The interviewees and their companies are presented below.

Table 3. Interviews with case companies

Company	Interviewee	Job Title	Date	Time
Videquus	Linus Jernbom	CEO and co-founder	5th of April 2018	45 min
Horsemeup	Monica Sjösvärd	CEO and Founder	5th of April 2018	44 min
Equilab	Adam Torkelsson	CEO and co-founder	6th of April 2018	31 min

3.3.2.1 Interviews with Key Informants

Early in the thesis project, four unstructured interviews with industry experts were conducted. These persons were chosen because of their unique possession of knowledge of the horse industry which is relevant to this study. The purpose of these interviews was to gain a deeper understanding of the structure of the industry, as well as get an update about the current discussion of innovation in the horse industry. What is referred to as expert here, is referred to as key informants by Bryman and Bell (2005). The main reason for using unstructured interviews was due to the aim to adapt the interview to interviewees' different backgrounds and expertise. Moreover, the unstructured interview method was suitable to allow for new perspectives from the interviewees, that would be difficult to predict beforehand by the interviewer. When conducting the unstructured interviews, hand notes have been used in order to make sure that the conversation was later on used in the correct way.

3.3.2.2 Case Studies

To answer the previously stated research question, three semi structured interviews has been made with innovative companies in the equine industry. The interviewees was invited to participate in a one hour interview by email, and out of four companies, three decided to participate. When accepting the offer, the companies received the interview guide one day in advance. Two of the interviews were conducted face to face at the interviewees' office, and the third one was conducted via a phone call. The two face to face interviews were recorded and transcribed, in order to be able to process the material after the interviews had conducted and also to make sure that everything from the interviews were used according to how the interviewees expressed the answers. The interview that were made through a phone call were not recorded, but instead, very extensive notes were taken. The ambition was to record the phone call interview as well, but because of technical issues, that was unfortunately not possible.

The KIE literature has been the main inspiration for the interview guide for the case companies and was later on also used for analyzing the empirics. Another benefit with using this kind of literature, has been that it allows for exploring the connections between different aspects of entrepreneurship, rather than focusing on one single aspect. The connections were favoured to study due to the novelty of setting and because of the lack of previous research.

3.4 Analysis

In order to analyze the material created by the interviews in a structured way, the material from the key informants has been analyzed by comparing their view on innovation. This has been done in order to understand their different views, mainly by comparing similarities and differences. The case companies material has been analyzed using a thematic approach including coding the material in color. The different areas that the material has been divided into are financing, knowledge input, societal influence and characteristics of the founder. These categorizations were inspired by the theory chapter, which also enables clear connection between the theory and the empirics.

As mentioned by Yin (2003), a multiple case study can be analyzed both in-case and also between the different cases. This approach has been adapted in this study, and a search for both similarities and differences have been done in order to understand the data fully.

3.5 Validity and Reliability

For qualitative studies, it is often mentioned that the concepts of validity and reliability might not be as relevant as for quantitative studies (Bryman & Bell, 2005). This is because the qualitative studies focuses on providing an explanation from the interviewees perspective and context, in opposite to quantitative studies that are more focused on measurements. Nevertheless, the validity of this study has been improved by having a clear research question as well as making sure to find interviewees with proper reliable knowledge regarding the topic that is investigated.

In terms of reliability, it is difficult to argue that the study can be replicated with the exact same results. This is because the study is affected by the social context as well as by the timing which might include that the reasoning of the interviewees might be different in a later stage of development of the company. However, the study has a clear focus on certain aspects of managing a knowledge intensive venture, which also leads to higher reliability.

3.6 Limitations

As a result of that the study focuses on Swedish equine innovations, it will be difficult to generalize the results to other sectors and geographical locations. This is both because of that the financial, educational and societal surroundings as well as the equine industry might look different in other parts of the world. Even though there has been a structured way of searching for innovations, there is a risk that some companies that would fit into the criterias of this study will be missed for different reasons. One could be the lack of presence on the internet and another one could be that the company provides a product that is not commonly used for the large audience of horse people.

A final limitation that should be mentioned is that the case companies have been asked about the past few years, which makes it difficult to exclude any risk of that the interviewees might reconstruct their memories of what happened during the last years.

4. Empirical Findings

This chapter will present the information extracted from the reports about the equine industry, the four unstructured interviews and the three case studies.

4.1 Equine Industry

The equine industry consists of different professions as well as different types of companies. In the Arbetsmarknad och yrken inom svensk hästnäring 2010 report, the industry is presented as consisting of riders, veterinarians, insurance companies, teachers, farriers, horse owners, breeders, yard owners and workers, horse tourism companies and trainers. In addition, the structure of the industry is divided between lifestyle companies, non-profit organisations and profit-maximizing companies. Lifestyle companies that are common among small yards with tourism activities and breeding, are companies that are not having profit as their main goal. Instead, the ability to spend time on your hobby can be the main purpose of running a company of such type. Another intention could be to lower your own costs of your hobby by combining it with tourism, breeding or such. Non-profit organisations are associations that are often connected to the different sports, or different breeds. Profit-maximizing companies can be found in fodder production, horse equipment stores or simply in equipment production areas.

The majority of the research around horses is veterinary studies. When analyzing money allocated from “Stiftelsen Hästforskning”, the Swedish organization for distributing money to horse related research, it is possible to conclude that the majority of the money goes to veterinary studies, followed by breeding related research, horse therapy, the riders impact on the horse and gender equality related research among others.

In table 4 it is possible to find a categorization of research financed by Stiftelsen Hästforskning. As mentioned earlier based on the Holgersson report (2016), the majority of the research around horses are connected to veterinary studies which is also aligned with the results of this summarization. However, it is also interesting to see what other areas that have been prioritized to finance research in. As seen in table 4, research related to breeding is the second most common area of making research about in connection to horses. Furthermore, work conditions and traffic safety as well as fodder production are also areas that have been common topics for research.

Table 4. Equine Research

Veterinary studies	61,22%
Breeding Research	7,70%
Work Conditions and Traffic Safety	6,20%
Fodder Production	5,50%
Ground Construction	3,10%
Pedagogy	3,10%
Horse Therapy	2,30%
Horses and Nature	2,30%
The Riders Position and the Saddle	1,56%
Horses in an Urban Environment	1,56%
Rider's Body Physics	1,56%
Social Media	1,56%
Lifestyle Entrepreneurship	1,56%
Gender Equality Studies	0,78%
TOTAL	100,00%

4.2 Key Informants

4.2.1 LRF Häst

During the interview with LRF Häst, it was discussed in what way the equine industry would be able to develop, and what role LRF Häst would have in this change. The interviewee started out with explaining that the equine industry traditionally has been seen as an industry that consists of lifestyle entrepreneurs or leisure oriented companies only. This is related to that the equine industry is not seen as an agricultural business in Sweden, and that therefore, no governmental organization has responsibility to work with questions regarding these companies in the equine industry. This leads to that there are very few statistics of the horse businesses in general, which makes it difficult to get a holistic view of the industry. It also leads to that all companies within the industry are treated the same way, even though there is a lot of different companies with different purposes and profitability levels. At the same time, horse related companies have different regulations and laws compared to agricultural businesses, which often makes it more difficult and complicated to run businesses including horses. Because of the lack of statistics, a collaboration between Dalarnas Högskola, LRF Häst and HNS is created in order to develop a business intelligence model that would be able to provide more data about the industry. The project is funded by Stiftelsen Hästforskning, among others, with the purpose of making the industry more professional by being able to provide data around decisions. At the same time, the interviewee mentioned that the segment

of products and services are growing in equestrian settings and that some of the regulation are being changed to the better.

4.2.2 HNS - Hästnäringens Nationella Stiftelse

HNS is an organization that has a purpose to, in the long term, improve and develop the equine industry while they are being funded by the Swedish horse racing association. The organization is responsible for the management of the three equestrian schools in Sweden, namely Flyinge, Strömsholm and Wången.

The interviewee that is employed by HNS works with job conditions within the industry, and explained during the interview that the work conditions in the equine industry historically have had different challenges since the job often includes heavy work. When talking about jobs in the industry, the interviewee referred to the jobs that are in direct relation to the horse itself. The interviewees reflection of the sometimes heavy work in the industry was that one reason for this would be due to that there has not been as much union involvement as in some other industries. She also explained that there is a willingness to provide good working conditions among many employers, but that they don't always have the financial strength to carry that through to the extent that they would like. Nevertheless, the interviewee also highlights that the job conditions are improving and that many companies are interested in gaining knowledge about how they can improve these aspects of their companies. One of the goals of doing so, is to become recognized for being a professional company which is important to gain customers. In addition, several initiatives for creating knowledge and ways of improving the working conditions have been launched by HNS lately. This has also led to better conditions when comparing to the situation in the past, and the prediction is that it will keep improving in the near future.

4.2.3 Researcher at Lund University

The researcher is located at the faculty of service management at Campus Helsingborg and has been working on creating understanding of the existence of lifestyle entrepreneurs that in this case works with horse related tourism. The interviewee explained during the interview that she has an interest for horses herself, and that she has a background in sociology. The researcher has been conducting qualitative research from different companies, and has found that the companies sometimes have difficulties in making profit at the same time as the main purpose of running these kind of businesses is often related to a genuine interest in horses or because of the family situation rather than having profitability as the main goal. Furthermore, the researcher has found that the reward from working in these settings are often made by a system of gifts instead of money as in many other industries. An example of that would be that you have a neighbor helping out with the yard duties, and that this person is getting a horseback riding lesson instead of a monetary salary. The researcher continued with explaining the complexity of this system, that also is dependent on many individuals working together and with the same ambition and goals.

4.2.4 Ridsportens Innovationer

The interviewee has a technical background and is one of the project leaders for Ridsportens Innovationer where she has been assigned to lead the development and implementation of a smart indoor arena at Flyinge. Ridsportens innovationer is described as a collaboration between Svenska ridsportförbundet, Flyinge and Saab and focuses upon finding technical solutions that can enhance the experience of equestrian sports, contribute to the well-being of the horse and improve methods for education and training both horses and riders. During the interview, the interviewee explained that this project aims for creating a testing environment for new technologies in relation to equestrian sports and then mostly focusing upon dressage. This will be done by facilitating this testing environment, where sensors and cameras will capture the movements of the horse as well as measuring the external environment. The purpose of this testing environment would be to gain knowledge by different collaborations and to evoke a technological interest for adolescents. With the focus on the younger audience, the aim is to create knowledge and a network of people interested in these kind of technical activities.

4.3 Case Companies

4.3.1 Videquus

Videquus was created by seven founders in 2016. The idea originated from one of the founders who has a background as an engineer and currently work as a CEO of a company listed on the public stock exchange in Sweden. He had observed the way of keeping and treating horses since his wife and daughters were active riders and horse keepers, and noticed potential areas of improvement. The company provides a smart camera that is connected to a mobile app that gives the horse owner a report from each night where the horse is usually under no human surveillance. In addition, it is possible to use the camera for live streaming the activities of your horse and follow its movements and behaviour. This enables better control of your horse as well as insights about normal behaviour which makes it possible to detect abnormalities such as for example diseases and lameness.

When getting the idea, the founder were interested in testing the concept of it, and this was done by contacting the, at that time, current CEO of Flyinge AB who had even more understanding of the market as well as knowledge around how to run a business. This person were impressed by the idea, and decided to use her network to connect with other people that could contribute to the development of this product. This enabled a team that believed in the idea, and that were interested in taking this product to the market. The team consisted of seven people with different expertise, and except from the two founders mentioned above, the CEO of Videquus has previous experience from entrepreneurship and business development and a fourth founder has expertise within software engineering. Another founder has experience around hardware and the last one possess knowledge in entrepreneurship within the horse industry.

In order to develop the idea, external financing was considered crucial for fast growth. Initially, all of the founders decided to spend at least one day a week to contribute to the development of the company in different ways. By doing so, they were able to develop the idea to a certain level where it was possible to present a concept to potential investors. At this stage, an investment company called Skaraborg Invest AB were interested in investing in Videquus as well as Almi Invest and Palle Stenberg who is an angel investor. The investors plays different roles in the company, and are active in different ways.

When it comes to collaboration with other companies, the team behind Videquus believes that it is of great importance and that it can enhance the results for all parties. Currently, the company is collaborating with Saab and Svenska Ridsportförbundet in a project called “Ridsportens innovationer” with the aim of creating a smart indoor arena. The CEO of Videquus mentions during the interview that horse technology is on the rise, and that collaborating is a good way for this area to grow. Videquus is also collaborating with SLU, which is the Swedish Agricultural University. They have been collaborating regarding horses and their expression of pain which is highly relevant to the product that Videquus provide. Moreover, they have also been collaborating with Flyinge and Strömsholm, which both has education for professions around horses such as farrier, professional riders and hippologists. The collaboration with these two organizations has been through accessing their yards as a testing location for the development of Videquus cameras.

4.3.2 Horsemeup

Horsemeup was founded in 2012 by Monica Sjösvärd who is also the CEO of the company which provides a digital platform for equestrian brands to sell their products. You can find products for both the horse and the rider as well as products for your yard at this webpage. Horsemeup is the largest webpage for equestrian equipment in the Nordics, and offers 120 brands together with 240 000 products.

As mentioned above, Monica is the founder and CEO. She has been studying textile management in the US, and business development at IHM Business School in Sweden. She has always been working with textiles, and after finishing her studies at IHM Business School, she was recruited to a brand selling underwear. At this time, Monica started to notice that the sales of underwear that traditionally came from physical stores, started to move towards being online. When realizing this, she started to encourage store owners to create online businesses at the same time as she realized that many of the store owners thrived in the physical stores with meeting customers, meanwhile they were not as interested in creating online businesses that requires more technical understanding. In addition, Monica as a rider and mother of a daughter who was riding, noticed that the e-commerce did not exist within the equestrian field yet. With the previous experience from textile and business development, she decided to act upon the opportunity that she noticed, i.e. e-commerce for horse products and equipment.

In the beginning of developing the webpage Horsemeup, Monica financed the development with her own money and some financial support by a family member. Additionally, the company applied for, and received, some financial support from a non-governmental start-up network in Gothenburg. This was done initially, and when that amount of money was not enough any more, Horsemeup got a bank loan from Almi Företagspartner. Eventually, even more money were required to finance the quick growth of the company, and by that time Monica was contacted by the venture capital firm Backing Minds. They had been looking into equestrian sports as a potential area to finance start-ups within, and they found Horsemeup being an interesting business case. They agreed upon investing in Horsemeup, and Monica in return agreed on letting go of some of the ownership of the firm. As investors, the two founders of Backing Minds are very interested in keeping up with the development of the company, and Monica is in contact with them each week where they discuss opportunities and challenges regarding the development of Horsemeup.

When it comes to societal interaction as mentioned in the theory chapter, Horsemeup has not been collaborating with other institutions during these years. During the interview, Monica mentions that it has sometimes been difficult to discuss her business with other companies and investors since they do not have enough understanding of the horse industry. This has been challenging sometimes when it comes to finding investors and companies to collaborate with, even though Monica had a developed network before establishing Horsemeup. However, when finding investors with enough ambition and willingness to try to understand the horse industry, there has been no problem with finding money and support.

4.3.3 Equilab

Equilab is a horse application that helps measure your riding. The company was founded in 2016 by three founders with different educational backgrounds. Today the application has around 100 000 users, and the application can be used regardless of what discipline that you are into. The application is available in different languages, and is used in several countries.

The idea originated from one of the founders who previously was a triathlete and got injured. Meanwhile, a new interest for horseback riding emerged, and also a need for measuring the riding as he was used to be able to do so in his earlier triathlete activities. With a background in physics, the soon to be founder of Equilab decided to spend some time trying to solve this dilemma. In the very near future, a solution were found at the same time as the invention was mentioned for people in his surroundings. One of the other founders, with a background in industrial engineering and business development, was currently looking for business ideas with potential to develop. The two founders got in touch with each other via a common friend, and as mentioned during the interview, it was the perfect match. When meeting each other and realizing the potential of the invention, they decided to act upon the opportunity. Furthermore, a third person eventually also joined the venture with focus on, and responsibility for, information technology and interaction design.

The application as well as the technology behind it, have been time consuming to develop. In order to finance the development and to facilitate the quick growth, the company has been supported by external funding in different ways. Initially, support in terms of money has been provided by different governmental institutions followed by investments from Chalmers Ventures. During the interview, the CEO also states that there is a lot of growth in horse tech market and that they did not experience any problems with finding financing opportunities.

When asked about collaboration and interaction with other institutions or companies, it is mentioned that collaboration is something that they value highly. Collaboration is something that they are actively trying to accomplish in their everyday business. As they see it, there is a lot of interesting opportunities remaining in the horse industry, and they are aware of that they will not be able to act upon all of those. At the same time, the CEO refer to the horse industry as a hidden market with lots of potential. To date, Equilab is currently a part of the project with a smart indoor arena at Flyinge initiated by Ridsportens Innovationer which is a project supported by Svenska Ridsportförbundet and Saab. Additionally, they are a part of a growth acceleration program at Chalmers University of Technology called Scale Global. They are also connected to an incubator called Innovatum in Trollhättan. Moreover, they collaborate with Casio after winning their award for being the best horse application in the world. They also collaborate with ESA, the the european space agency, which also has an incubator that they are part of. The CEO of Equilab is determined that collaboration can be, and should be, beneficial for all parties involved.

5. Analysis

In this section, the empirical findings will be discussed and compared with the theory. This facilitates a structured analysis of the empirical setting, in connection to what previous research has suggested.

5.1 Key Informants

In the theory section of this thesis, a distinction was made between an entrepreneur and a small business owner (Carland et al., 1984). Since this study focuses on innovation and entrepreneurship, case companies were chosen by being categorized as KIE ventures. Moreover, it is possible to conclude that all of the case companies are entrepreneurs, in the sense that they are all using strategic management practices with the aim for profit and growth. On the other hand, when talking to the key informants, profitability as well as professionalism has been discussed as difficult for companies in the horse industry. Since this has not been a problem for the case companies, one explanation of the discrepancies might be that the companies the key informants talked about are different from the case companies in this study. Because of the difference in approach towards profitability and to some extent also growth, it is possible to think of the companies that the key informants mentioned as small business owners and the case companies as entrepreneurs. This could be further supported by the description of bad working conditions in the industry which was also explained by the lack of earnings for small business owners.

When discussing innovation with the key informants, the discussion tended to be drawn towards continuous improvements as well as inventions rather than innovation as defined in this study (Fagerberg & Mowery, 2006). The implications of that includes treating many ways of improving products and services in the same way, when they in reality are not. In addition, when using the concept of innovation for describing inventions, a large part of creating innovations will not be taken into consideration. Inventions are important for the ability to create innovations, but after coming up with an invention, efforts and actions are necessary for taking the product to the market.

5.2 Case Companies

The different case companies participating in this study have contributed with empirical findings in various ways. The first part of the KIE model that were described in the theory chapter will here be used as a structure for categorizing and analyzing the empirical data. At first the source of knowledge input will be presented, followed by financing, societal impact and characteristics of the founder.

5.2.1 Source of Knowledge Input

The different companies that have been used as cases in this study provides several ways of combining necessary knowledge in order to start their companies. As McKelvey and Heidemann Lassen (2013) describe in their KIE model, three types of knowledge are involved in starting a KIE venture.

To begin with, the authors (McKelvey & Heidemann Lassen, 2013) mentioned market knowledge as important. In this case, the market is about the activities around horses, and the case companies have gained this type of knowledge in different ways. Videquus has seven founders with different backgrounds, and when it comes to market knowledge, they also have different experience. The person who got the business idea in the first place had insights in horse keeping due to his wife and daughter, even though he was not being active himself. The second person who was involved to provide a better understanding of the market potential for the business idea had practical knowledge from horseback riding and horse keeping. The second company, Horsemeup, has one founder with a keen interest in, and understanding of, horseback riding and horse keeping. As seen in the empirics, she mentioned that horses have been a part of almost her entire life. The remaining company, Equilab, has had knowledge about horses due to the fact that one of the founder being a rider himself and keeps horses at his yard.

It is possible to conclude that Videquus and Equilab have had founders possessing all three kinds of knowledge while the founder of Horsemeup have been possessing two types of knowledge and hiring other staff for cover the third type of knowledge. This means that the empirical findings from the three case companies are all aligned with the theory from McKelvey and Heidemann Lassen (2013). The implications of this finding are that the KIE literature are also explaining the KIE ventures correctly even in this setting. However, it also gives insights regarding what efforts that are necessary in order to establish a successful KIE venture in the equine industry. It describes the dynamic between the three types of knowledge, and in that sense, it is also clear that they all need to be used together to accomplish innovation. In addition, it is interesting that the teams of founders of the case companies have been contributing to the business idea regardless of what type of knowledge they possess. An implication of that could be that collaborations between individuals with horse expertise would be as important as individuals with other knowledge. Furthermore, this has been shown when looking at Videquus having three founders with focus on technological aspects and with previous experience from this field. Additionally, the founder of Horsemeup clearly stated that she does not have the technological experience required for her business model, and that she hired people for performing such tasks. All of the founders of Equilab have clear connections to technology, when it comes to both education and previous working experience.

5.2.2 Financing

All of the case companies have been supported by venture capital funding, something that according to McKelvey and Heidemann Lassen (2013) is not the most common type of funding for KIE. In opposite to the statistics of financing alternatives that McKelvey and Lassen (2013) presents, personal financial resources has not been very common among the case companies in this study. Horsemeup is the only case company that describes own financial resources as having a great impact of the possibility to realize the innovative idea,

and even though using own financial resources, other methods for financing, such as funding from venture capital, was also used. The reason for the vast amount of supportment by venture capital funding for the case companies, might be due to that they are not at the very early stage of creating the venture. Horsemeup has been existing since 2012 while Equilab and Videquus was founded in 2016. That might be one reason, which is also aligned with the theory presented by McKelvey and Heidemann Lassen (2013).

Funding from a bank has been mentioned as the second most common way of financing KIEs (McKelvey & Heidemann Lassen, 2013), and in this case study, one company have been using that way of accessing capital. The company using this method was Horsemeup, and the funding from the bank was through a corporate loan. Another common way of financing KIEs have been through getting financial support from family members, which has not been widely identified as an option for the case companies.

Furthermore, all case companies mentioned financial support by grants from different associations connected to the Swedish government. It is mentioned as useful but not necessary to finance the quick growth. In addition, common for all case companies is that they all mention the use of the different financing methods as crucial for financing the quick growth. In the way that they are all mentioning that, it is obvious that the interviewees sees no other option to external financing to realize the idea quickly.

Interestingly, none of the companies that have been interviewed has had trouble with finding financing opportunities. In the case of Videquus, the interviewee explained that there were offers from other investors and that the companies had the possibility to choose among the investors. However, it is also mentioned that being a start-up within the horse industry might require effort in explaining the relatively unknown market for potential investors.

5.2.3 Societal Influences

Regarding whether the case companies are involved and in connection with incubators, universities or large companies, slightly different connections can be found. For example, Equilab has a connection to Chalmers University of Technology as they have been receiving funding from Chalmers Ventures. Furthermore, they are also a part of Scale Global which is a growth acceleration program organized by Chalmers and funded by Vinnova. In addition, they do also collaborate with other companies of different kinds to develop new solutions and techniques at the same time as they are collaborating with an incubator.

Another company, Videquus, have also been collaborating with a university. However, that collaboration was together with SLU which has other focus than technological such as in the other case with Chalmers. The research performed at SLU is in much more closer connection to the animals, in this case horses, and their behaviour and health. The collaboration between Videquus and SLU has been in regard to the horses expression of pain which is highly relevant to the product that Videquus provide, since the product is as dependent of the

knowledge about the technology as well as the knowledge about the horses behaviour in order to be successful.

Horsemeup is different from the other companies when discussing the aspect of societal influence. In one way, it is possible to argue that the business idea originated from the connection to the founders previous job role. However, the innovative idea was applied in another industry, and without connections to the previous employer. At the same time, the business idea might not have been discovered unless the connection between the founders interest in horses and the experience from previous positions was existing.

The analysis of the societal influence in connection to the three case companies, can conclude that there has been limited opportunities of collaboration with existing actors connected to horses. Instead, an observation can be made that the case companies, especially Videquus and Equilab, have been finding different actors to collaborate with due to their very specific interest in some of the areas. Examples of that can be the collaboration between SLU and Videquus, or the collaboration between ESA and Equilab. This implication of that would be that societal connection and influence are relevant also in this industry, but the aspect of that innovations around horses is relatively new, makes the way of reaching these collaborations might be different in opposite to another industry.

5.2.4 Characteristics of the Founder

The case companies have been founded by individuals with different characteristics and expertise. In two of the three cases, the founders networks has been highlighted as important for the development of the venture. Regarding Videquus, the founders network has been described as crucial for creating credibility and reliability. At the same time, two of the founders of Equilab got together by their personal network, and therefore the existence of Equilab might not occur without the network.

Something that makes Horsemeup stand out, is that it is one founder of the company instead of several as in the other cases. And as mentioned earlier, other knowledge that the founder does not possess, has been gained through hiring people with that expertise. The impression from the explanation of not using networks or collaborations to the same extent as the other case companies, is that it is a result of the lack of feasibility to collaborate with other actors from totally different industries, rather than an unwillingness to do so.

The theory section about characteristics of the founder also relates to the education and experience that the founders bring to the new venture. This has been further described in the section about knowledge input, and then explained in relation to the three different types of knowledge. However, it is also important to highlight the motivations behind starting a new venture, and interestingly, the three case companies consists of founder with and without previous experience from being entrepreneurs. Common to all interviewees is the willingness to exploit the innovative idea since they are all convinced that their solutions will create value

for the customer. Furthermore, curiosity around the opportunities as well as an interest in exploring the ideas potential is also mentioned as motivation among the founders.

5.3 Summary of Analysis

All three case companies are similar in their view on financing of their ventures, i.e. that they all mention external funding as crucial for enabling quick growth. Moreover, they also describe that they all found it easy to find external funding since the equine industry to a large extent is categorized as a hidden market to many investors, meaning that there has been little exposure of innovative entrepreneurs which also means that there is still a lot of potential in the industry. This might also be explain why the case companies did not have problem with funding, since they all are backed with external money.

Another aspect of the theory that has been recurring in all of the case companies, is the different types of knowledge that McKelvey and Heidemann Lassen (2013) presents. All case companies have been using market, business and technological knowledge in the creation of their ventures, but in various ways. Whether this has implications for the successfulness of the business is not possible to tell, but would be interesting to investigate further. For example, having the three different types of knowledge available by the founders might influence the accessibility of knowledge, or the willingness to share such knowledge, in opposite to when having employees possessing it.

Even though several similarities can be found among the case companies, some differences are identified as well. McKelvey and Heidemann Lassen (2013) puts emphasis on the founders networks, and that this asset is important in the creation of KIE ventures. However, it is possible to conclude that the companies in this study has been using their networks for different purposes. Regarding Videquus, networks were mentioned as incredibly important for marketing purposes since some of the founders are recognized by many actors in the horse industry. In that way, credibility were created which were mentioned as highly beneficial when starting a totally new company with a totally new product. In the case of Equilab, some of the founders personal network seemed to have great impact in finding the right competence among potential founders. Horsemeup is different from the other companies in the way that networks has not been useful according to the founder, which is explained by that the founder worked in a totally different industry before starting the venture. Horsemeup is also the company of these three, that has the lowest degree of novelty in the business idea since shopping online was possible for other goods before Horsemeup was founded. This might have implications regarding the network needed, and might be replaced by the previous knowledge from the founder together with the vast experience of online shopping that the investors have. This might also explain why Videquus and Equilab are actively collaborating with other actors while the founder of Horsemeup describes it as slightly more difficult to collaborate with other networks of entrepreneurs since the equine industry is different from other ones. Since the technology of Videquus and Equilab's products is more advanced, this might create larger incentives to collaborate with other actors.

The three cases illustrated in this case study shows that starting a KIE venture in the equine industry requires different types of knowledge, just as described in the KIE model by McKelvey & Heidemann Lassen (2013). Moreover, the case companies show that gaining the knowledge can be done and combined in different ways. Interestingly, the market knowledge that in this case is about the equine industry, has not been mentioned as the most central one. Some kind of market knowledge, as an active rider or from being in contact with horses in some way, has been important for all companies in the very first step of getting the business idea. Furthermore, that is followed by getting access to business knowledge and technological knowledge through finding founders with that knowledge, or simply starting the company and then hire someone with the right education and experience.

Regarding financing, it is possible to conclude that all case companies have been backed by investors. The general impression from getting external money is that it has not been difficult to get investors. However, it is sometimes mentioned that the industry is often not previously known by the investor, and that it is therefore important and necessary to explain how the industry works and describe the customer need in order to get funding.

6. Summary

In the section, conclusions based on the interviews with the key informants and the case companies in connection to the overall analysis of innovation in the equine industry will be presented. Furthermore, the last part of this section will include suggestions for future research in relation to this study.

6.1 Conclusion

The need of innovation in the equine industry can be supported by both governmental reports, the case companies perspectives as well as by the investors perspective and opinion. In order to draw conclusions from this study, the research question presented in the beginning of the thesis will be stated below.

How does product innovation evolve in the Swedish equine industry?

To answer the research question, a literature study of innovation literature and equine research, four unstructured interviews with key informants and three case studies have been conducted. The information collected shows that product innovation in the Swedish equine industry is created by independent entrepreneurs, with mixed financing methods and often with the usage of market, business and technological knowledge. This is something slightly different from what the four key informants are talking about, mentioning the struggle with profitability and lack of investments. However, this might be the result of the key informants referring to small business owners rather than entrepreneurs. When being able to divide the industry into segments and when understanding the different intentions of the entrepreneur, it is also possible to understand that the companies operate in different ways and therefore also face obstacles and opportunities of different kinds.

Another insight from the empirical findings is that the definition of innovation seems to differ when talking to the key informants and the case companies. The case companies are referring to technical innovations in many ways, while the key informants often refer to examples of continuous improvements or incremental innovations. This is an interesting insight, especially since it might lead to different views on how innovation within equestrian sports should develop basically because inventions and innovations requires different processes of development.

Regarding collaborations among actors in the equine industry, it is possible to conclude that there is willingness to collaborate in general. However, it is mentioned that it is sometimes hard to find people to collaborate with, which might be connected to that there is not much areas or clusters established today. At the same time, it is also clear that it is possible to find potential collaborations even though it might require a clear view on how they should be executed together with having a clear purpose of the cooperation.

Furthermore, it is possible to conclude that market knowledge is most important at the stage of discovering the innovative idea. It is also interesting to consider that the knowledge about the market, which is about the equine industry in this case, has been varying from being very detailed to be very general. That means that it is possible to generate innovative ideas as an observer of the market as well as a practitioner. Furthermore, this has implications on in what way the innovator decides to realize the idea. When already possessing a high level of understanding of the market, the need of the other types of knowledge is vital. However, when not possessing the market knowledge required in order to estimate the potential of the idea, this type of knowledge can be acquired by teaming up with someone with that expertise. Moreover, another interesting empirical finding is that all the founders with the innovative idea has been possessing market knowledge in combination with either business knowledge or technological knowledge. In connection, business and technological knowledge seem to be highly relevant important to being able to carry through the idea in a successful way. Related to the ambition and capability of realizing innovative ideas, are networks which can be concluded to be highly influential for KIE ventures. This regards both the ability to finding co-founders, potential actors to collaborate with as well as creating trustworthiness. Finally, the study of the three case companies shows that external funding is possible to get also as a KIE venture in the equine industry.

After having analyzed the empirical findings together with the additional information about the equine industry, it is possible to conclude that the innovation system in this industry for some reason seem to be less developed than other industries. This can be based on the description of the many innovative opportunities still remaining according to the interviewees as well as based on reports about innovation in the industry. Another way of basing this argument, is on the lack of existing clusters or innovation arenas such as incubators for this specific industry. However, the solution of that effect among the innovative ventures is sometimes to collaborate with actors that share the same technology, and in that way find synergy effects. At the same time, there seen to be a clear interest in collaborating in different ways and it is also possible to find examples of areas for collaboration at an early stage. The lack of previous innovation systems might also have implications for entrepreneurs planning on realizing innovative ideas, simply by that the industry is still offering a lot of opportunities.

6.2 Further Research

As suggestions for further research, it would be interesting to look more into the factors of what makes the innovation system in the equine industry being slightly less developed in comparison to other industries. Possible explanations of that could be lack of competition that sometimes lead to less incentives for incumbents to innovate, and another reason could also be the lack of business and/or technological knowledge which in alignment with this study is important for establishing innovative knowledge intensive ventures. Furthermore, it would be very interesting to conduct the same kind of study as presented in this thesis, with focus on other parts of the world since this one is only focusing on Sweden. That would make it

possible to gain a deeper understanding of differences and similarities of innovation in the equine industry globally.

As a concluding remark, it would be interesting to study the same companies at a later stage of development. By doing so, it would be possible to gain additional knowledge of more aspects of innovation. For example, internationalization is something that most probably will be a natural next step for the case companies. Such aspects would be interesting to examine further, assuming that it is possible to find companies in the equine industry that is going through that phase in the near future.

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8. Appendix 1

Interview questions:

Introduction:

- Could you please give an introduction to your company?
- What is your role at the company?
- How did you come up with the idea to start this company?
- Could you tell me more about the founders of this venture?

Knowledge input:

- What does your educational background look like?
- What kind of work related experience do you have from before?
- Do the founders have any relation to horses?
- Do you have any experience from running a business before?
- What kinds of knowledge have been important when starting this venture?
- How has these types of knowledge been combined?

Characteristics of the founder:

- How did the founders find each other?
- When it comes to networks, how has this been used when starting the company?
- Did you plan on becoming entrepreneurs already before coming up with this business idea?

Financing:

- How did you finance this venture?
- Did you have other options? And in that case, how did you reason about it?
- How did you experience the process of finding funding? Any differences when finding funding for a horse related venture?
- What is your view on external funding?
- What role does your investor take?

Societal influence:

- What is your view on collaborating with other actors?
- Did you do so during the creation of your venture?

Additional questions:

- What is your view on innovation in the equine industry?
- How do you work with developing your product?

- Any additional thoughts on innovation in the equine industry that you would like to share?
- Any questions before ending this interview?